ECR-POS DLL Specification for First Abu Dhabi Bank

Document Version History

Version	Date	Author(s)	Revision Notes
1.0	10/01/2017	Leonil Castillo	Initial
1.1	18/01/2017	Leonil Castillo	Config Terminal Additional Tags as Parameter Get Terminal Info Additional Tags New Function DLL Version Added new error codes
1.2	06/02/2017	Leonil Castillo	Added DCC Completion
1.3	10/04/2017	Leonil Castillo	New Error Code has been introducing Enabling/Disabling the logs
1.4	27/04/17	Leonil Castillo	New Error Code has been Introduce New Tag Has been Introduce for Online Status Config Terminal parameter has been updated
1.5	03/05/17	Leonil Castillo	Updated GetTotals
1.6	24/5/2017	Leonil Castillo	Added Command Type
1.7	01/06/2017	Leonil Castillo	Introduce Fallback Tag Removed Sequence Number Tag Modified Expiry date value
1.8	13/06/2017	Shyamli Nigam	Added Command Type tag for all the transaction. Void- Removed Reversal tag Refund- EMV tags and OnlineStatus tag are added. Get Totals- Date and Time tags changed to Transaction Date and Transaction Time. Data format - Updated Txnstat tag.
1.9	27/08/2017	Leonil Castillo	Added new command to configure dual sim parameter Introduce new error code for dual sim Added new command for offline sale Introduce new error code for offline sale
1.10	18/03/2018	Zehra Batool	Updates for DCC at POS
1.11	26/03/18	Leonil Castillo	Implementation of X-Report and Z-Report Introduce New Tags to support the X-Report and Z-Report
1.12	19/04/2018	Zehra Batool	Implementation of new command type for device communication and Terminal communication

1.13	28/04/2019	Francis Ryan Capulong/ Phoebe Ria Gagarin	Implemented Base Serial Communication Fix Logger for PCL mode Implemented Communication Mode Added ErrorCode E087 (Pin bypass not allowed) Added Error Description Tag in Serial Communication using Fix Remote Program Download Command in PCL Mode Fix Invalid Amount in Serial Communication Mode Platforms Fix the duplicated error description in Serial Communication Mode Fix for EPP Inquiry in Serial Communication Mode Date Time format for generating the receipt Modified Response XML for Purchase, Void, and Last Transaction Added actual sample of XML tags Modified Purchase description with EPP and DCC Added missing items in Data Format with response description Added X-out and Z-out intermediate messages and description Added Communication Mode description and Sequence Diagram
1.14	30/04/2019	Phoebe Ria Gagarin	Added MREF Value tag
1.15	24/06/2019	Francis Ryan Capulong	- New Error Codes added - Error Description changed for 007, 054, 058,086,087,088,89
1.16	27/06/2019	Francis Ryan Capulong	- New Error Code added E090
1.17	30/06/2019	Phoebe Ria Gagarin	- New Error Code E06 - Added Response Code
1.18	03/07/2019	Phoebe Ria Gagarin	- Updated the Intermediate Message - Added USB Connection & disconnection, and identifying an Ingenico cable
1.19	17/07/2019	Chinnu Prabhakar, Manish Sharma	- Added PCL & Non PCL Commands - Updated Error Codes
1.20	24/07/2019	Chinnu Prabhakar, Manish Sharma	- Added Error code for xOut and zOut reports
1.21	30/07/2019	Chinnu Prabhakar	- Updated PrintSummary(z-report) method call for Non-PCL - Added ErrorCode E183
1.22	08/08/2019	Phoebe Ria Gagarin	- Added Error Code E04
1.23	11/09/2019	Chinnu Prabhakar	- Added SetConfig command
1.24	17/09/2019	Vivekanandan	- MrefLabel and MrefValue in Settlement and GetConfigCommand
1.25	10/08/2019	Chinnu Prabhakar	- Changing command type to 55 from 54 for set config.

1.26	20/10/2019	Padmavathi Ganimini	- Added commands SendOfflineAdvices, SendPendingReversals, Tip and Tip completion
1.27	20/11/2019	Manish Sharma	- Added new tag SelectedOnPos
1.28	09/02/2020	Manish Sharma	- Added new Error code E094 for reversal transaction

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1. Purpose

This document explains the usage and functionalities which are available for the vendor who intends to integrate their system with Telium ICT2XX, IWL2XX POS terminals using Interface DLL. Interface DLL is developed with C#.Net Framework (3.5 and above).

2. Scope

This document covers only the commands & functionalities available for the integration.

The integration is supported by three modes of communication:

1. Serial Communication with USB Base – refer as **Non PCL**
2. PCL USB - refer as **PCL**
3. PCL Bluetooth – refer as **PCL**

The integration can be set through Communication mode from Merchant menu. When SET COMM MODE is selected by pressing the Green button, two options will be displayed:

- 0 – PCL MODE
- 1 – STANDALONE MODE
- 2 - BASE USB – IWL [Non-PCL]
- 3 - USB COMM Mode -ICT,IWL [Non-PCL]

PCL mode is supported when paired with another device to initiate transaction.
Non-PCL mode is also supported by selecting StandAlone mode wherein the transaction will be initiated using the POS terminal.

When PCL mode is selected, the terminal will ask for password (Supervisor Password). When the password is entered correctly, the terminal will display “TERMINAL IS IN PCL MODE” message. Two options will be displayed:

- 0 – SET PCL COMPANION
- 1 – GET PCL COMPANION

By selecting 1- Get PCL Companion, this will verify which PCL companion is currently used. By selecting 0 – Set PCL Companion, two selection will be displayed:

- 1 KEY GREEN FOR USB
- 2 KEY RED FOR BTH

Pressing keypad 1 or Green button, the terminal will use PCL-USB and display “PCL USB SELECTED”. The following are the USB configuration:

- Baud rate – 115200
- Data bits - 8
- Parity - None
- Stop bit – 1
- COM Port should be less than or equal to 10
- Support .NET Framework v4.0 and v4.6

Pressing the keypad 2 or Red button, the terminal will use PCL-Bluetooth and display “BLUETOOTH SELECTED”. The following are the terminals and Bluetooth version used:

- Link 2500 - Bluetooth 4.x – Class 2
- IWL250 - Bluetooth v2.1 EDR (enhanced data rate) – Class 1

2.1. Organization

The two communicating stations POS and EFT device can be identified as Requesting Station (RQT) and Receiving Station (RCT). Data communication process consists of the following.

- Connection set-up.
- Data transmission.
- Disconnection.

2.2.1 Connection set-up

The requesting station sends an enquiry message to receiving station. The requesting station monitors receiving station to make sure that it responds within 500ms. RCT responds with an ACK, if it is ready. The receiving station then waits for data transmission to begin.

Syntax: Start PCL

2.2.2 Data Transmission

The requesting station starts transmitting data through selected communication mode. The data packet is in the format.

Syntax: XML string

2.2.3 Connection close

The communication port is disconnected.

Syntax: Stop PCL

2.2.4 Retry

In the connection set-up phase, the requesting station sends ENQ up to three times after monitoring time has been exceeded if ACK, NAK has not been received.

In the data transmission phase, the data packet is sent up to three times if a NAK or invalid response has been received.

3. Application Interface Commands

The integration commands helps ECR vendor to instruct the EFT device to initiate a payment with authorization host. The EFT device intended for integration should have been put in ECR mode with required parameters to do a payment. When a payment command is initiated, EFT device should send intermediate message, reflecting the states of transaction processing to ECR. After authorization completion, EFT device sends the final response to ECR. ECR should wait for the final command, before it can send any other command.

4. Commands

4.1. Purchase/Purchase with Tip

The payment command is initiated by the ECR application. The POS terminal receives the transaction amount from the ECR, and displays the amount on the POS display. The terminal displays “PLS INSERT/TAP/SWIPE CARD” to initiate a card-based transaction. The customer inserts/swipes/taps the card at the POS terminal or key in the card number. <DCC / EPP flow>. The terminal prompts for a PIN, if required, and connects to the host for an authorization. The status of the transaction like terminal displays “INSERTCARD”,”ENTER PIN”, “PROCESSING

TRANSACTION", "APPROVED", "REMOVE CARD" or any other error messages or intermediate results can be send by the POS terminal while the transaction is in progress. Terminal will send the final XML response to the ECR with or without the optional DCC or EPP tags.

DCC Flow:
If the card belongs to DCC, then terminal will go for DCC rate lookup with MONEX host. If it receives successful response, DCC Rate lookup will be displayed in POS terminal. Cardholder can OPT IN/OPT OUT DCC Rate lookup on terminal.

NOTE: DCC Section Tag will be available only if the IsDCC tag is available and set to 1. Else the normal purchase response will be received.

EPP Flow:
If the transaction is eligible for EPP transaction, the POS terminal will then send a request to the host to get the Installment Plan Details. Once the POS terminal receives the response from the host, it will display the list of plans for user selection, and connects to the host for an authorization.

The terminal will not allow any other command once it starts transmitting request to the host. The result of the transaction will be sent back to the ECR in a structured format, which includes the tags for the payment done.

NOTE:
If DCC and EPP tags are not available in the response, this should be considered as the final response without DCC / EPP.

The ONLINE STATUS TAG will be appended in the response if the transaction has been approved offline. If the tag is not present in the response, it is approved as online. Successful purchase transaction can be identified if the Error Code is set to E000 and Reversal Tag is set to "0" or if the Reversal Tag is not present in the final XML response.

SYNTAX

PCL

String Purchase(String transactionAmount, string mrefvalue);
String PurchaseWithTip(String transactionAmount, string mrefvalue);

Non-PCL

int Purchase(string `eftData`,string mrefLabel);
int PurchaseWithTip(string txnAmount, string mrefLabel);

PARAMETERS

transactionAmount/eftData

Type: System.String
Transaction amount with a maximum of 9 digits.
The decimal "." character should be excluded. (i.e. 103.31 = "10331")

Mrefvalue/mrefLabel

Type: System.String
Value with a maximum of 22 alphaNumeric characters.

Can be pass as empty string if you not required. MREFValue tag will only be available as part of the response if the parameter pass is not empty string.

RETURN VALUE

XML Formatted String

REQUEST XML PURCHASE

```
<EFTData>
  <CommandType>12</CommandType>
  <Amount></Amount>
  <MREFValue></MREFValue><!—Optional-->
</EFTData>
```

REQUEST XML SALEWITHTIP

```
<EFTData>
  <CommandType>30</CommandType>
  <Amount></Amount>
  <MREFValue></MREFValue><!—Optional-->
</EFTData>
```

Intermediate Messages

- Insert Card (Entry modes : All)
- Card Inserted (Entry modes : Chip)
  - Notification that a card has been inserted by the customer.
- Card Swiped (Entry modes : Magstripe)
  - Notification that a magnetic stripe card has been swiped by the customer.
- Card Ejected(Entry modes : Chip)
  - Notification that POS terminal has displayed a message requesting the card to be removed.
- Card Removed (Entry modes : Chip)
  - Notification that the card was removed by the operator/card holder.
- Enter PIN(Entry modes : All)
  - Notification that the POS terminal has prompted for PIN (ONLINE/OFFLINE) entry.
- PIN Entered(Entry modes : All)
  - Notification that the card holder has entered the PIN.
- Fallback
  - Notification that the entry mode/card acceptance had failed and will use the next available interface. (e.g. chip fallback to MagStripe)
- Online Processing (Entry modes : All)
  - Notification that the transaction is being sent online to the authorization host.
- Response Received (Entry modes : All)
  - Transaction response is received from authorization host.
- Transaction Being Reversed (Entry modes : All)
  - Notification that the reversal for that transaction is sent to the authorization host.
- DCC Rate Lookup
  - Notification that the terminal connecting to DCC Host for Rate Lookup.
- DCC Offer Screen
  - Notification that the terminal displaying the DCC Offer Screen.

- DCC Status
  - Notification that the cardholder has OPT IN or OPT out or cancelled the transaction.
- Enter Tip Amount
  - Notification that the cardholder has an option to enter the Tip Amount for Purchase with Tip transaction.

RESPONSE XML PURCHASE

Response code from the bank can either be “APPROVED” or “DECLINED”.

```
<EFTData>
  <CommandType>12</CommandType>
  <ErrorCode></ErrorCode>
  <MERCHANTNAME></MERCHANTNAME>
  <MERCHANTADDRESSLINE1></MERCHANTADDRESSLINE1>
  <TransactionResult></TransactionResult>
  <ResponseCode></ResponseCode>
  <TransactionType></TransactionType>
  <TID></TID>
  <MID></MID>
  <AppVersion></AppVersion>
  <TransactionDate></TransactionDate>
  <TransactionTime></TransactionTime>
  <BatchNo></BatchNo>
  <ReceiptNo></ReceiptNo>
  <CardSchemeName></CardSchemeName>
  <MaskCardNumber></MaskCardNumber>
  <ExpiryDate></ExpiryDate>
  <CardHolderName></CardHolderName>
  <Amount></Amount>
  <TipAmount></TipAmount><!—Optional for Purchase with Tip-->
  <Currency></Currency>
  <TxnStatus></TxnStatus>
  <AuthCode></AuthCode>
  <EntryMode></EntryMode>
  <RRN></RRN>
  <CHVerify></CHVerify>
  <Fallback>0</Fallback>
  <ONLINESTATUS></ONLINESTATUS><!--Optional for approved Offline>
  <Reversed></Reversed><!--Optional for Reversal -->
<EMVData><!--Optional for EMV Card>
<ApplicationLabel></ApplicationLabel>
<AID></AID>
<TVR></TVR>
<TSI></TSI>
<AC></AC>
<CID></CID>
<PanSeqNo></PanSeqNo>
</EMVData>
```

```
<SelectedOnPos>1</SelectedOnPos> ><!--Optional for EPP and DCC transaction>
<IsDcc></IsDcc><!--Optional for DCC>
<DccSection>
<DccFrCur></DccFrCur>
<DccAmt></DccAmt>
<LocalCur></LocalCur>
<LocalAmt></LocalAmt>
<DccExchgRate></DccExchgRate>
<DccMarkup></DccMarkup>
<DccCovFee></DccCovFee>
</DccSection>
<EPP>1</EPP><!--Optional for EPP transaction>
<InstallPlanSection>
<SelectedPlanOption>
<PlanID></PlanID>
<Tenure></Tenure>
</SelectedPlanOption>
</InstallPlanSection>
<MREFLabel></MREFLabel><!—Optional>
<MREFValue></MREFValue>
<ErrorDescription></ErrorDescription>
</EFTData>
```

Purchase-Contactless
Purchase-Chip
Purchase-Swipe
Purchase-Manual Entry
Purchase-Fallback Swipe
Appendix C – Sequence Diagram

4.2. Void

This is to inform the host that the transaction previously performed at the POS terminal has been canceled.

SYNTAX

PCL

String Void(string transactionAmount, string receiptNo , string mrefvalue)

Non-PCL

int VoidPurchase(string amt, string invoiceNo, string mrefLabel);

PARAMETERS

receiptNo/invoiceNo

Type: System.String

The invoice number (sequence number) to void. The transaction being voided should be present in the POS terminal. Maximum of 6 digits.

transactionAmount/amt

Type: System.String

Transaction amount which will be used for validation, with a maximum of 9

digits. The decimal "." character should be excluded. (i.e. 103.31 = "10331")

mrefvalue/ mrefLabel
Type: System.String
Value with a maximum of 22 alphaNumeric characters.
Can be pass as empty string if you not required.
MREFValue tag will only be available as part of the response, if the parameter passed in request message is not empty string.

RETURN VALUE

XML Formatted String

REQUEST XML VOID

```
<EFTData>
  <CommandType>25</CommandType>
  <Amount></Amount>
  <ReceiptNo></ReceiptNo>
  <MREFValue></MREFValue>
</EFTData>
```

RESPONSE XML VOID

```
<EFTData>
  <CommandType>25</CommandType>
  <ErrorCode></ErrorCode>
  <MERCHANTNAME></MERCHANTNAME>
  <MERCHANTADDRESSLINE1></MERCHANTADDRESSLINE1>
  <TransactionResult></TransactionResult>
  <ResponseCode></ResponseCode>
  <TransactionType></TransactionType>
  <TID></TID>
  <MID></MID>
  <AppVersion></AppVersion>
  <TransactionDate></TransactionDate>
  <TransactionTime></TransactionTime>
  <BatchNo></BatchNo>
  <ReceiptNo></ReceiptNo>
  <CardSchemeName></CardSchemeName>
  <MaskCardNumber></MaskCardNumber>
  <ExpiryDate></ExpiryDate>
  <CardHolderName></CardHolderName>
  <Amount></Amount>
  <Currency></Currency>
  <TxnStatus></TxnStatus>
  <AuthCode></AuthCode>
  <EntryMode></EntryMode>
  <RRN></RRN>
  <OrgCommandType></OrgCommandType>
   <DccSection> <!--Optional for DCC>
   <DccFrCur></DccFrCur>
```

```
<DccAmt></DccAmt>
<LocalCur></LocalCur>
<LocalAmt></LocalAmt>
<DccExchgRate></DccExchgRate>
<DccMarkup></DccMarkup>
</DccSection>
<MREFLabel></MREFLabel><!—Optional>
<MREFValue></MREFValue>
<ErrorDescription></ErrorDescription>
</EFTData>
```

Void Purchase-Contactless
Void Purchase-Chip
Void Purchase-Swipe
Void Purchase-Manual Entry
Void Purchase-Fallback Swipe
Void Refund
Appendix C – Sequence Diagram - Void

4.3. Refund

SYNTAX

PCL

String **Refund**(string amount, string mrefvalue);

Non-PCL

int Refund(string `eftData`, string mrefLabel);

PARAMETERS

amount/`eftData`

Type: System.String

Transaction amount with maximum of 9 digits. The decimal "." character should be excluded. (i.e. 103.31 = "10331")

mrefvalue/mrefLabel

Type: System.String

Value with a maximum of 22 alphaNumeric characters.

Can be pass as empty string if you not required. MREFValue tag will only be available as part of the response if the parameter pass is not empty string.

RETURN VALUE

XML Formatted String

REQUEST XML REFUND

```
<EFTData>
  <CommandType>38</CommandType>
  <Amount></Amount>
  <MREFValue></MREFValue>
</EFTData>
```

RESPONSE XML REFUND

```
<EFTData>
  <CommandType>38</CommandType>
  <ErrorCode></ErrorCode>
  <MERCHANTNAME></MERCHANTNAME>
  <MERCHANTADDRESSLINE1></MERCHANTADDRESSLINE1>
  <TransactionResult></TransactionResult>
  <ResponseCode></ResponseCode>
  <TransactionType></TransactionType>
  <Reversed></Reversed><!--Optional for Reversal>
  <TID></TID>
  <MID></MID>
  <AppVersion></AppVersion>
  <TransactionDate></TransactionDate>
  <TransactionTime></TransactionTime>
  <BatchNo></BatchNo>
  <ReceiptNo></ReceiptNo>
  <CardSchemeName></CardSchemeName>
  <MaskCardNumber></MaskCardNumber>
  <ExpiryDate></ExpiryDate>
  <CardHolderName></CardHolderName>
  <Amount></Amount>
  <Currency></Currency>
  <TxnStatus></TxnStatus>
  <AuthCode></AuthCode>
  <EntryMode></EntryMode>
  <RRN></RRN>
  <CHVerify></CHVerify>
  <Fallback>0</Fallback>
  <EMVData><!--Optional for EMV Card>
  <ApplicationLabel></ApplicationLabel>
  <AID></AID>
  <TVR></TVR>
  <TSI></TSI>
  <AC></AC>
  <CID></CID>
  <PanSeqNo></PanSeqNo>
  </EMVData>
 <MREFLabel></MREFLabel><!—Optional>
  <MREFValue></MREFValue>
 <ErrorDescription></ErrorDescription>
</EFTData>
```

Refund

4.4. Last Transaction Status

POS Terminal will return the status of the last transaction.

SYNTAX

PCL

String **LastTransactionStatus**(string Print, string mrefvalue);

Non-PCL
int LastTransactionStatus(string mrefLabel);

PARAMETERS

Print
Type:System.String
Print has either 0 or 1 value:
0: POS only returns the last transaction status
1: POS also prints the receipt if 'Print by POS' is enabled in TMS

Mrefvalue/mrefLabel
Type: System.String
Value with a maximum of 22 alphaNumeric characters.
Can be passed as empty string if you not required. MREFValue tag will only be available as part of the response if the parameter passed in request is not empty string.

RETURN VALUE

XML Formatted String

REQUEST XML LAST TRANSACTION STATUS

```
<EFTData>
  <CommandType>27</CommandType>
  <MREFValue></MREFValue>
</EFTData>
```

RESPONSE XML LAST TRANSACTION STATUS

```
<EFTData>
  <CommandType>27</CommandType>
  <ErrorCode></ErrorCode>
  <MERCHANTNAME></MERCHANTNAME>
  <MERCHANTADDRESSLINE1></MERCHANTADDRESSLINE1>
  <TransactionResult></TransactionResult>
  <ResponseCode></ResponseCode>
  <TransactionType></TransactionType>
  <Reversed></Reversed><!--Optional for Reversal>
  <TID></TID>
  <MID></MID>
  <AppVersion></AppVersion>
  <TransactionDate></TransactionDate>
  <TransactionTime></TransactionTime>
  <BatchNo></BatchNo>
  <ReceiptNo ></ReceiptNo >
  <CardSchemeName></CardSchemeName>
  <MaskCardNumber></MaskCardNumber>
  <ExpiryDate></ExpiryDate>
  <CardHolderName></CardHolderName>
  <Amount></Amount>
  <Currency></Currency>
```

```
<TxnStatus></TxnStatus>
<AuthCode></AuthCode>
<EntryMode></EntryMode>
<RRN></RRN>
<CHVerify></CHVerify>
<ONLINESTATUS></ONLINESTATUS><!--Optional for approved Offline>
<Fallback></Fallback>
<EMVData><!--Optional for EMV Card>
<ApplicationLabel></ApplicationLabel>
<AID></AID>
<TVR></TVR>
<TSI></TSI>
<AC></AC>
<CID></CID>
<PanSeqNo></PanSeqNo>
</EMVData>
<IsDcc></IsDcc><!--Optional for DCC>
<DccSection>
<DccFrCur></DccFrCur>
<DccAmt></DccAmt>
<LocalCur></LocalCur>
<LocalAmt></LocalAmt>
<DccExchgRate></DccExchgRate>
<DccMarkup></DccMarkup>
<DccCovFee></DccCovFee>
</DccSection>
<MREFLabel></MREFLabel><!—Optional>
<MREFValue></MREFValue>
<ErrorDescription></ErrorDescription>
</EFTData>
```

Get Last Transaction Purchase-Contactless
Get Last Transaction Purchase-Chip
Get Last Transaction Purchase-Swipe
Get Last Transaction Purchase-Manual Entry
Get Last Transaction Purchase-Fallback Swipe
Get Last Transaction Refund
Get Last Transaction Void Purchase-Contactless
Get Last Transaction Void Purchase-Chip
Get Last Transaction Void Purchase-Swipe
Get Last Transaction Void Purchase-Manual Entry
Get Last Transaction Void Purchase-Fallback Swipe
Get Last Transaction Void Refund
Get Last Transaction Reversal

4.5. GetTotals

Initiate the command to get the number of transaction performed and the total amount in the batch.

SYNTAX

PCL

String GetTotals();

Non-PCL

int GetTotals();

PARAMETERS

None.

RETURN VALUE

XML Formatted String

REQUEST XML GET TOTALS

```
<EFTData>
  <CommandType>35</CommandType>
</EFTData>
```

RESPONSE XML GET TOTALS

```
<EFTData>
  <CommandType>35</CommandType>
  <ErrorCode>E000</ErrorCode>
  <TID></TID>
  <MID></MID>
  <BatchNo></BatchNo>
  <TransactionDate></TransactionDate>
  <TransactionTime></TransactionTime>
  <DebitCount></DebitCount>
  <DebitAmount></DebitAmount>
  <CreditCount></CreditCount>
  <CreditAmount></CreditAmount>
  <TotalTransactionCount></TotalTransactionCount>
  <TotalTransactionAmount></TotalTransactionAmount>
  <ErrorDescription></ErrorDescription>
</EFTData>
```

Get Totals

4.6. Settlement

Send the batch to the host.

SYNTAX

PCL

string Settlement();

Non-PCL

int Reconciliation();

PARAMETERS

None.

RETURN VALUE

Xml Formatted String

REQUEST XML SETTLEMENT

```
<EFTDATA>
  <COMMANDTYPE>36</COMMANDTYPE>
</EFTDATA>
```

RESPONSE XML

```
<EFTData>
  <ErrorCode></ErrorCode>
  <Status> </Status>
  <ErrorDescription></ErrorDescription>
  <MREFLabel></MREFLabel><!—Optional>
  <MREFValue></MREFValue>
</EFTData>
```

Settlement

4.7. GetTerminalInfo

EFT POS Terminal will return the information about the terminal.

SYNTAX

PCL

String GetTerminalInfo();

Non-PCL

int GetTerminalInfo();

PARAMETERS

None.

RETURN VALUE(S)

Xml Formatted String

REQUEST XML GET TERMINAL INFO

```
<EFTData>
  <CommandType>16</CommandType>
</EFTData>
```

RESPONSE XML GET TERMINAL INFO

```
<EFTDATA>
    <CommandType>16</CommandType>
    <ErrorCode>< / ErrorCode >
    <AppVersion></AppVersion>
    <AppDate> </AppDate>
    <AppTime></AppTime>
    <SerialNo></SerialNo>
    <TID></TID>
    <MID></MID>
    < AUTHPRIIPADDRESS ></ AUTHPRIIPADDRESS >
```

```
< AUTHPRIPORT ></ AUTHPRIPORT >
< AUTHSECIPADDRESS ></ AUTHSECIPADDRESS >
< AUTHSECPORT ></ AUTHSECPORT >
<APN></APN>
<APN2>/APN2>
<DISABLESIM1></DISABLESIM1>
<DISABLESIM2></DISABLESIM2>
<CommunicationMode></CommunicationMode>
<TLS></TLS>
<TLSTYPE></TLSTYPE>
<CardEntryTimeOut>100</CardEntryTimeOut>
<PinEntryTimeOut>100</PinEntryTimeOut>
<MREFLabel></MREFLabel><!—Optional>
<MREFValue></MREFValue>
<ErrorDescription></ErrorDescription>
</EFTDATA>
```

Get Terminal Info

4.8. Parameter Download

This command is required only for projects where TMS is used. It supports both file base and dynamic parameter download. EFT POS terminal will communicate to the TMS for downloading terminal configuration data including CA Public Keys, EMV parameters, Range Bins, AID's, etc.

SYNTAX

PCL

String UpdateParameter();

Non-PCL

int UpdateParameter();

PARAMETERS

None.

RETURN VALUE

XML Formatted String

REQUEST XML PARAMETER DOWNLOAD

```
<EFTData>
  <CommandType>39</CommandType>
</EFTData>
```

RESPONSE XML PARAMETER DOWNLOAD

```
<EFTDATA>
  <CommandType></CommandType>
  <ErrorCode></ ErrorCode >
  <TID></ TID >
  <MERCHANTNAME></MERCHANTNAME>
  <MERCHANTADDRESSLINE1></MERCHANTADDRESSLINE1>
```

```
<MID></MID>
<RECEIPTFOOTERLINE1></RECEIPTFOOTERLINE1>
<RECEIPTFOOTERLINE2></RECEIPTFOOTERLINE2>
<ErrorDescription></ErrorDescription>
</EFTDATA>
```

Get Parameter

4.9. Program Download

Instruct the EFT POS terminal to do software download. Be sure that the latest application is set in TMS.

SYNTAX

PCL

String ProgramDownload();

Non-PCL

int UpdateProgram(string eftData) <optional>

PARAMETERS

eftData which refers to the location of file
Type: System.String
This option is used if the program download happens on file base where the parameter file stands for path of the file.

RETURN VALUE

Xml Formatted String

RESPONSE XML PROGRAM DOWNLOAD

```
<EFTDATA>
    <CommandType></CommandType>
    <ERRORCODE></ERRORCODE>
    <OLDVERSION></ OLDVERSION >
    <NEWVERSION></ NEWVERSION >
    <ErrorDescription></ErrorDescription>
</EFTDATA>
```

4.10. sConfig Terminal

Set the Terminal ID, Merchant ID and Communication parameter and confirmation parameter (void) which will be used by the terminal to communicate to the server.

SYNTAX

PCL

String ConfigTerminal(string eftData);

PARAMETERS

eftData

Type: System.String

RETURN VALUE

Xml Formatted String

RESPONSE XML

```
<EFTDATA>
```

```
        <ERRORCODE></ERRORCODE>
        <ERRORDESCRIPTION></ERRORDESCRIPTION>
</EFTDATA>
```

4.11. Config Dual Sim

Set the APN1, Username1, Password1, APN2, Username2, Password2, Sim Priority (1 – Sim 1, 2-Sim 2) and Disabling/Enabling of Sim 1 and Sim 2.

SYNTAX

PCL

String ConfigDualSim(string eftData);

PARAMETERS

```
<EFTDATA>
    <APN>apn1</APN>
    <GPRSUSERNAME>user1</GPRSUSERNAME>
    <GPRSPASSWORD>password1</GPRSPASSWORD>
    <APN2>apn2</APN2>
    <GPRSUSERNAME2>user2</GPRSUSERNAME2>
    <GPRSPASSWORD2>password2</GPRSPASSWORD2>
   <SIMPRIORITY>1</SIMPRIORITY>
    <DISABLESIM1>0</DISABLESIM1>
   <DISABLESIM2>0</DISABLESIM2>
</EFTDATA>
```

RETURN VALUE

Xml Formatted String

RESPONSE XML

```
<EFTDATA>
    <ERRORCODE></ERRORCODE>
    <ERRORDESCRIPTION></ERRORDESCRIPTION>
</EFTDATA>
```

4.12. Scan Barcode

Send the command to the POS Terminal to scan the bar code. If the hardware does not support the barcode it will return a specific error code.

SYNTAX

PCL

String ScanBarcode();

PARAMETERS

None.

RETURN VALUE

Xml Formatted String

RESPONSE XML

```
<EFTDATA>
        <CommandType>40</CommandType>
        <ERRORCODE></ERRORCODE>
        <ERRORDESCRIPTION></ERRORDESCRIPTION>
```

```
        <BarcodeValue></BarcodeValue>
    </EFTDATA>
```

4.13. Standalone Mode

POS Terminal will exit the interface mode

SYNTAX

PCL

String StandaloneMode();

Non-PCL

int StandAloneMode();

PARAMETERS

None.

RETURN VALUE

Xml Formatted String

RESPONSE XML

```
<EFTDATA>
    <CommandType>28</CommandType>
    <ERRORCODE></ERRORCODE>
    <ERRORDESCRIPTION></ERRORDESCRIPTION>
</EFTDATA>
```

4.14. GetPairedDevices

Get the list of Ingenico paired terminal.

SYNTAX

PCL

String GetPairedDevices();

PARAMETERS

None.

RETURN VALUE

Xml Formatted String

RESPONSE XML

```
<EFTDATA>
    <ERRORCODE></ERRORCODE>
    <ERRORDESCRIPTION></ERRORDESCRIPTION>
    <Device>
    <ID></ID>
    <Name></Name
    </ Device >
</EFTDATA>
```

4.15. ActivateCompanion

Activate a paired Ingenico terminal.

SYNTAX

PCL

String ActivateCompanion(string DeviceID);

PARAMETERS

None.

RETURN VALUE

Xml Formatted String

RESPONSE XML

```
<EFTDATA>
        <ERRORCODE></ERRORCODE>
        <ERRORDESCRIPTION></ERRORDESCRIPTION>
</EFTDATA>
```

4.16. DLL Version

Get the current DLL version that is being use by the application.

SYNTAX

PCL

String DLLVersion();

PARAMETERS

None.

RETURN VALUE

Xml Formatted String

RESPONSE XML

```
<EFTDATA>
        <ERRORCODE></ERRORCODE>
        <Version></Version>
        <ERRORDESCRIPTION></ERRORDESCRIPTION>
</EFTDATA>
```

4.17. EnableLog

This function will enable the DLL text formatted logs.

SYNTAX

PCL

Void EnableLog(string path);

Non-PCL

EnableLog- parameter of EftInterface

Supported values 0 – disable logs

1 – enable logs

Eg : _eft.EnableLog=1 // saving the log

PARAMETERS

None.

RETURN VALUE

None.

4.18. DisableLog

This function will disable the logs.

SYNTAX

PCL

void DisableLog();

PARAMETERS

None.

RETURN VALUE

None.

4.19. X-Report (Print Detail Report)

The X report shows the details of transactions and total number and value of transactions performed for each card scheme since the last reconciliation.

SYNTAX

PCL

void XOutReport(string printOpt);

Non-PCL

```
int PrintDetailReport();
```

PARAMETERS

String printOpt:

0 – Print Base on TMS Parameter
1 – Print @ POS
2 – Print @ ECR
3 – Print Both ECR and POS

RETURN VALUE

XML Formatted String

REQUEST XML X-REPORT:

<EFTData>
<CommandType>49</CommandType>
<PrintOpt></PrintOpt>
<!—<InvNo></InvNo>
</EFTData>

RESPONSE XML X-REPORT

<EFTData>
<CommandType>49</CommandType>
<Hdr></Hdr>
<Xout>
<Cardx>
<CardTypex></CardTypex>
<TX>
<IN></IN>
<R></R>
<NoB></NoB>
</TX>
</Cardx>
</Xout>
<Zout>
<Cardz>
<CardTypez></CardTypez>

```
<Totals></Totals>
<Cardz>
<GrandTotal></GrandTotal>
</Zout>
<ErrorCode></ErrorCode>
</EFTData>
```

NOTE:

- <NoB></NoB> tags is present if no transactions are present for this card type.
- <TX></TX> tag is repeated for each transaction of same card type in the batch
- <Cardx></Cardx> tag is repeated for each card scheme
- <Cardz></Cardz> tag is repeated for each card scheme
- <Totals></Totals> tag is present if transactions are present for this card type

X-Report

4.20. Z-Report(Print Summary Report)

The Z report will show the total number and total amount of transactions performed for each card scheme since last reconciliation. If there are no transactions present in the batch, the report shows "No Business" for each card scheme.

SYNTAX

PCL

void ZOutReport(string printOpt);

Non-PCL

int PrintSummaryReport(string rspFrmt);

PARAMETERS

String printOpt:
0 – Print Base on TMS Parameter
1 – Print @ POS
2 – Print @ ECR
3 – Print Both ECR and POS
4 - Print CardSchema Total in response tag

REQUEST XML FROM ECR:

```
<EFTData>
    <CommandType>50</CommandType>
    <PrintOpt></PrintOpt>
</EFTData>
```

RESPONSE XML Z-REPORT

```
<EFTData>
    <CommandType></CommandType>
    <Hdr> </Hdr>
    <Zout>
    <Cardz>
    <CardTypez></CardTypez>
    <Totals></Totals>
```

```
</Cardz><Cardz>
<GrandTotal> </GrandTotal>
</Zout>
<ErrorCode></ErrorCode>
</EFTData>
```

Z-Report

4.21. Communication Mode

SYNTAX

PCL

String CommunicationMode(string comOpt);

PARAMETERS

0 - Use Terminal Communication
1 - Use Device Communication

REQUEST XML

```
<EFTData>
    <CommandType>52</CommandType>
    <CommunicationMode>0</CommunicationMode>
</EFTData>
```

RESPONSE XML

```
<EFTData>
    <CommandType>52</CommandType>
    <ErrorCode>E000</ ErrorCode >
</EFTData>
```

NOTE: This implementation is only for PCL-USB and PCL-Bluetooth.

4.22. SetConfig

SYNTAX

NON PCL

int SetConfig(bool isVoidConfirm,string CardEntryTimeOut, string PinEntryTimeOut);

PARAMETERS

isVoidConfirm
0 - to enable void confirmation
1 - to disable void confirmation
CardEntryTimeOut - set card entry time out
PinEntryTimeOut - set pin entry timeout

REQUEST XML

```
<EFTData>
    <CommandType>55</CommandType>
    <SkipVoidCnfmDsp>0</SkipVoidCnfmDsp>
    <CardEntryTimeOut>100</CardEntryTimeOut>
    <PinEntryTimeOut>100</PinEntryTimeOut>
</EFTData>
```

RESPONSE XML

```
<EFTData>
        <CommandType>55</CommandType>
        <ErrorCode>E000</ ErrorCode >
</EFTData>
```

NOTE: This implementation is only for PCL-USB and PCL-Bluetooth.

4.23. Send Offline Advices

SYNTAX

PCL

```
string SendAdvices()
```

PARAMETERS

NONE

REQUEST XML

```
<EFTData>
        <CommandType>53</CommandType>
</EFTData>
```

RESPONSE XML

```
<EFTData>
        <CommandType>53</CommandType>
        <ErrorCode>E000</ ErrorCode >
</EFTData>
```

NOTE: This implementation is only for PCL-USB and PCL-Bluetooth.

4.24. Send Pending Reversals

SYNTAX

PCL

```
string SendReversals()
```

PARAMETERS

NONE

REQUEST XML

```
<EFTData>
        <CommandType>54</CommandType>
</EFTData>
```

RESPONSE XML

```
<EFTData>
        <CommandType>54</CommandType>
        <ErrorCode>E000</ ErrorCode >
</EFTData>
```

NOTE: This implementation is only for PCL-USB and PCL-Bluetooth.

4.25. Tip

SYNTAX

PCL

```
string Tip(String transactionAmount, string mRefLbl)
```

PARAMETERS

NONE

REQUEST XML

```
<EFTData>
    <CommandType>29</CommandType>
    <Amount>1000</Amount>
</EFTData>
```

RESPONSE XML

```
<EFTData>
<CommandType></CommandType>
<ErrorCode></ErrorCode>
<MERCHANTNAME></MERCHANTNAME>
<MERCHANTADDRESSLINE1></MERCHANTADDRESSLINE1>
<MERCHANTADDRESSLINE2></MERCHANTADDRESSLINE2>
<TransactionResult></TransactionResult>
<ResponseCode></ResponseCode>
<TxnDescription></TxnDescription>
<TID></TID>
<MID></MID>
<AppVersion></AppVersion>
<TransactionDate></TransactionDate>
<TransactionTime></TransactionTime>
<BatchNo></BatchNo>
<ReceiptNo></ReceiptNo>
<CardSchemeName></CardSchemeName>
<MaskCardNumber></MaskCardNumber>
<ExpiryDate></ExpiryDate>
<CardHolderName></CardHolderName>
<Amount></Amount>
<Currency></Currency>
<TxnStatus></TxnStatus>
<AuthCode></AuthCode>
<EntryMode></EntryMode>
<MREFLabel></MREFLabel>
<MREFValue></MREFValue>
<RRN></RRN>
<CHVerify></CHVerify>
<EMVData>
<ApplicationLabel></ApplicationLabel>
<AID></AID>
<TVR></TVR>
```

<TSI></TSI>
<AC></AC>
<CID></CID>
<PanSeqNo></PanSeqNo>
</EMVData>
<ErrorDescription></ErrorDescription>
</EFTData>

NOTE: This implementation is only for PCL-USB and PCL-Bluetooth.

4.26. Tip Completion

SYNTAX

PCL

```
string TipCompletion(String receiptNo)
```

PARAMETERS

NONE

REQUEST XML

```
<EFTData>
        <CommandType>31</CommandType>
        <ReceiptNo>00023</ReceiptNo>
</EFTData>
```

RESPONSE XML

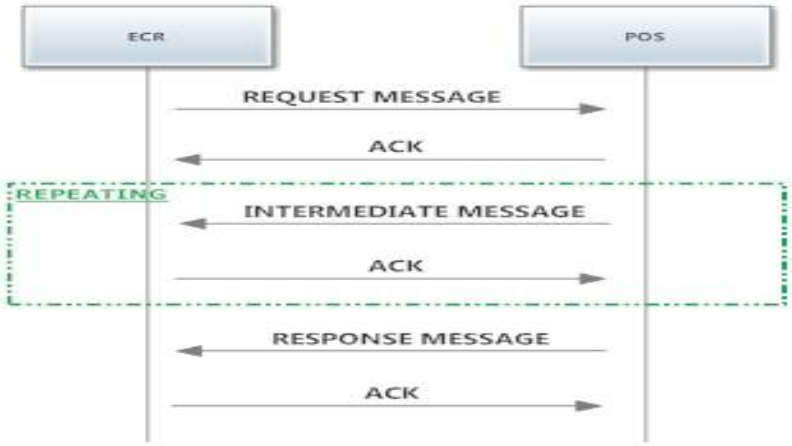
```
<EFTData>
<CommandType></CommandType>
<ErrorCode></ErrorCode>
<MERCHANTNAME></MERCHANTNAME>
<MERCHANTADDRESSLINE1></MERCHANTADDRESSLINE1>
<MERCHANTADDRESSLINE2></MERCHANTADDRESSLINE2>
<TransactionResult></TransactionResult>
<ResponseCode></ResponseCode>
<TxnDescription></TxnDescription>
<TID></TID>
<MID></MID>
<AppVersion></AppVersion>
<TransactionDate></TransactionDate>
<TransactionTime></TransactionTime>
<BatchNo></BatchNo>
<ReceiptNo></ReceiptNo>
<CardSchemeName></CardSchemeName>
<MaskCardNumber></MaskCardNumber>
<ExpiryDate></ExpiryDate>
<CardHolderName></CardHolderName>
<Amount></Amount>
<Currency></Currency>
<TxnStatus></TxnStatus>
<AuthCode></AuthCode>
```

```
<EntryMode></EntryMode>
<MREFLabel></MREFLabel>
<MREFValue></MREFValue>
<RRN></RRN>
<CHVerify></CHVerify>
<EMVData>
<ApplicationLabel></ApplicationLabel>
<AID></AID>
<TVR></TVR>
<TSI></TSI>
<AC></AC>
<CID></CID>
<PanSeqNo></PanSeqNo>
</EMVData>
<ErrorDescription></ErrorDescription>
</EFTData>
```

NOTE: This implementation is only for PCL-USB and PCL-Bluetooth.

5. Context

5.1. Message and Communication Flow



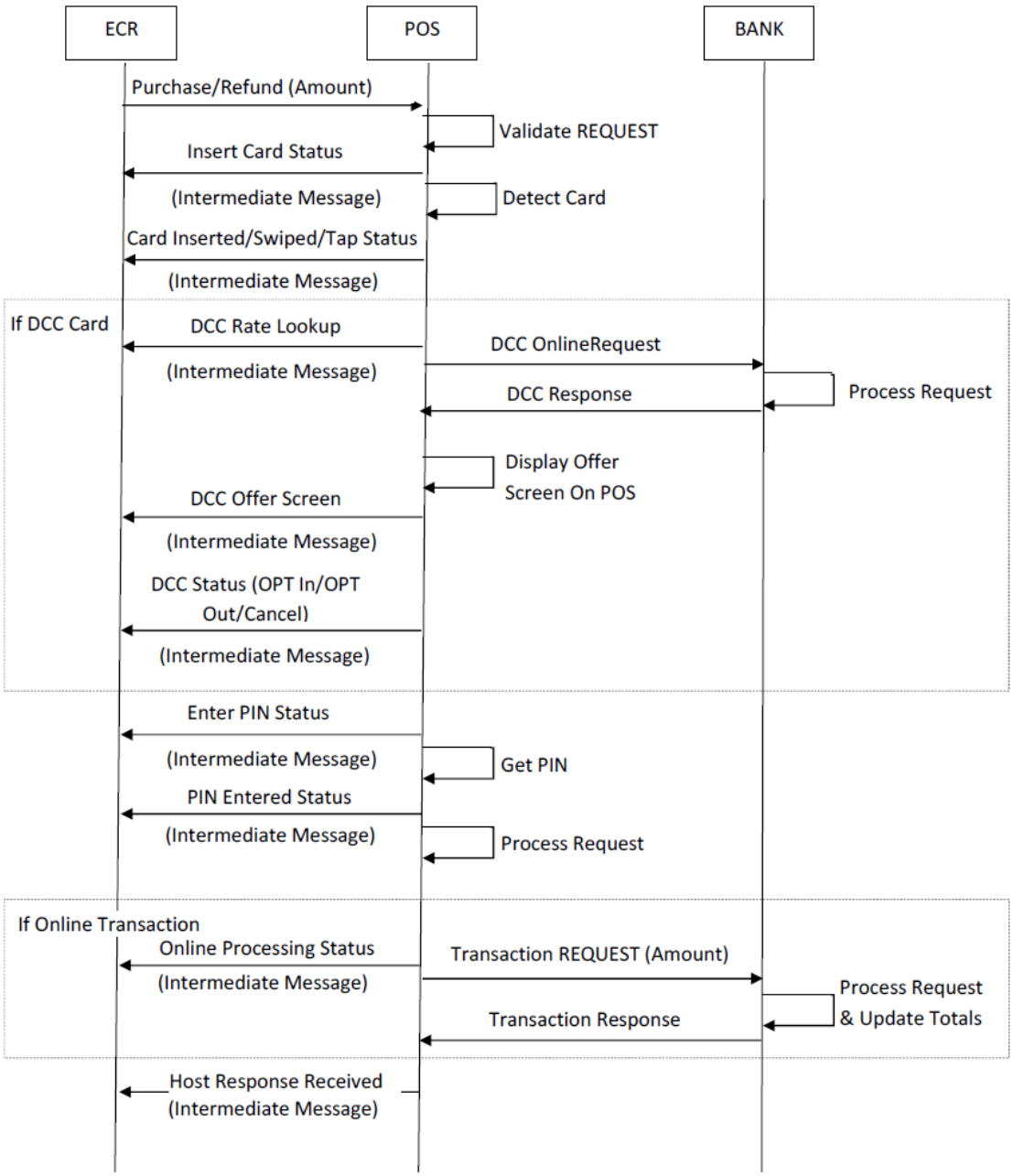


Figure 1 Communication Flow

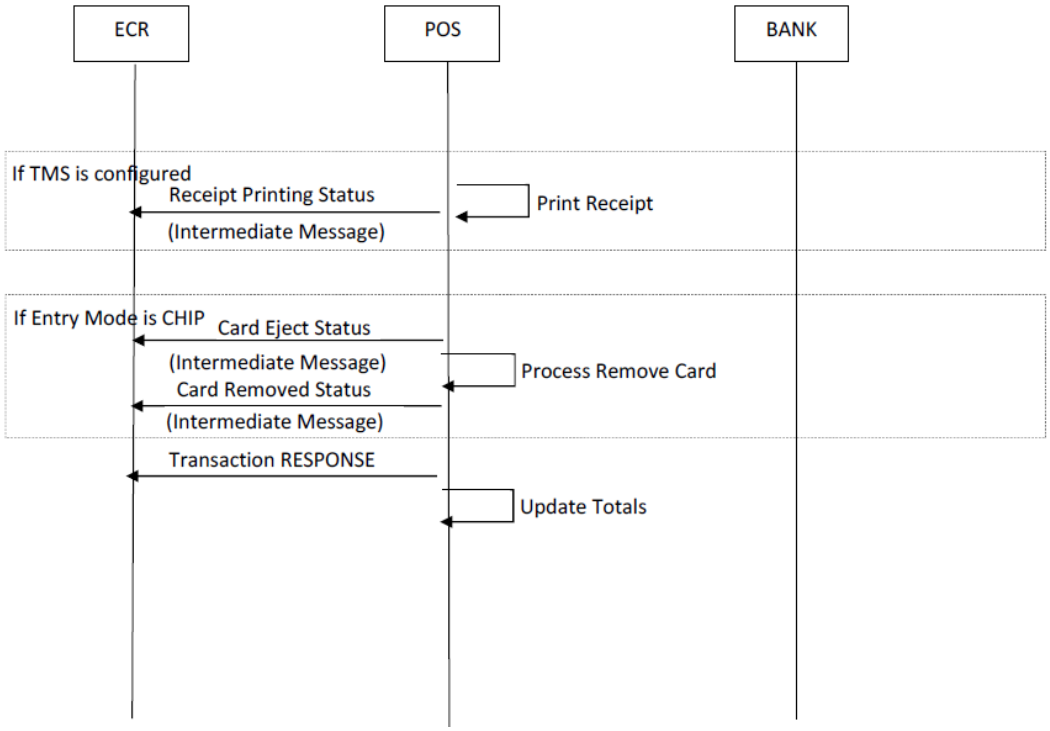


Figure 2 Message Flow

5.2. Intermediate Messages, Timeout, & Fallback

Intermediate messages are messages pertaining to the status of the current transaction and its peripherals (Card & PIN Status) by raising an event. This allows the ECR application to be more flexible in terms of displaying/knowing the real time state of the transaction.

MESSAGE STRUCTURE:

<STX><CommandType></CommandType><ETX><LRC>

EFT-POS terminal Timeout

This happens when the EFT-POS terminal fails to receive a response on time from an external entity. The response can be:

- In the form of an event/action; EFT-POS terminal waits for the user to insert his/her card or EFT-POS terminal waits for the user to enter his/her PIN.
- In the form of data packet (message response); EFT-POS terminal waits for the stream of the data which will be coming from the Host (in response to the request message).

Fallback

Intermediate message is sent to the ECR stating that the EFT-POS terminal is going for a FALLBACK. Fallback can happen from Contactless to Chip or Chip to Magstripe.

5.3. USB Connection & Disconnection

Events like **OnUSBDisconnection** and **OnUSBConnection** are used to triggers whether there is a disconnection or connection of the data cable.

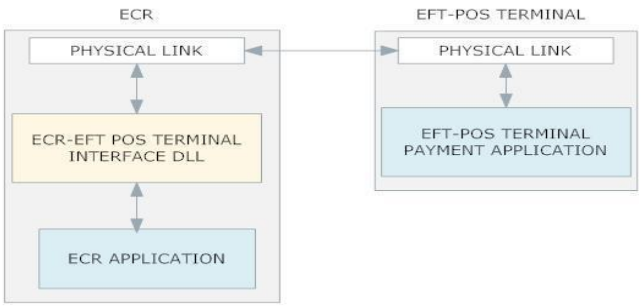
SAMPLE CODE

```
private EftInterface _eft;

_eft.OnUSBDisconnection += EftInterface_OnConnectivity;
_eft.OnUSBConnection += EftInterface_OnConnectivity;

private void EftInterface_OnConnectivity(object sender, EventArgs e)
    {
                Message.Show(sender);
     }
```

Added Error Code for "**Access denied to COMPort" – E183,** if this error code occurs dispose the sgEftInterface object and create the object again. if the error is happening in between a transaction and the transaction is successful on ingenico device and the ECR didn't get any final response, after disposing the object of DLL please call the Last Transaction Command to get the status of the last transaction performed by the ECR.

Click ErrorCodes table to find the USB disconnect/connect error codes & its description.

5.4. System Architecture



The EMV Payment Application residing in the EFT-POS Terminal will perform the functionality required by the external application. This architecture provides the external application the capability to automate the process of card payment which diminishes the need for user intervention.

The interface DLL will be using a configuration file (XML base) for all its configurations like which serial port to use and port settings.

5.5. Process Flow

This section explains the flow of certain features of the DLL on which the external application developer should be aware of.

5.6. Timeout

The interface DLL handles two types of timeout: timeout which occurs on the EFT-POS terminal and timeout which happens on the DLL.

- EFT-POS terminal Timeout
  This happens when the EFT-POS terminal fails to receive a response on time from an external entity. The response can be:
  - In the form of an event/action: EFT-POS terminal waits for the user to insert his/her card or EFT-POS terminal waits for the user to enter his/her PIN.
  - In the form of data packet (message response); EFT-POS terminal waits for the stream of the data which will be coming from the Host (in response to the request message).

With these scenarios the EFT-POS terminal will send a "TIMEOUT ERROR FROM POS" code to the interface DLL which will be forwarded to the external application.

6. Fallback

Fallback support (Chip to Magstripe Only) can be configured from TMS if the terminal supports fallback. Fallback can happen from Contactless to Chip or Chip to Magstripe.

7. COM Type and Com Port

Upon creating the instance of this object you have to set the Com Type to 0/1 (0 – using com, 1 – using PCL) and specify the port if you are using a com by invoking **CreateInstance(0,COM1);**

Appendix A

Data Format

Name	Description of the response code	Format (Size/Range)	Fixed or SizeRange	Sample	Presence M = Mandatory O = Optional C = Conditional
AC	EMV Application Cryptogram	16H	F	D42C9089D90119B8	C
AID	EMV Application Id	16H	V	A0000000031010	C
Amount	Transaction amount to be processed	12N	V	1200 (for 12.00 AED)	M
ApplicationLabel	EMV Application Label	16AN	V	Visa Credit	C
AppVersion	POS Terminal Software version	5AN	V	1.01	M
AuthCode	Authorization code received from the bank	9AN	V	12a456	C5
AuthSrcCod	Transaction Identification 1-Online 5-Offline	1AN	F	@	C
BatchNo	Batch number of transaction	6N	F	1	M
Card	Group Tag which includes Card type and transaction details for each card type.				
CardHolderName	Cardholder name	26AN	V	Peter James	M
CardSchemeName	Card type	24AN	V	VISA	M
CardEntryTimeOut	Timeout for the card entry screen	3N	F	180	O
CardTypex	Group Tag - Card Scheme Heading				
CardTypez	Card Type to which summary has to be printed				
CHVerify	Verifier: 1- Online Pin 2- Offline Pin 3- Signature	1N	F	3	C
CID	Cryptogram Information Data	2H	F	40	C
CommandType	Instruction commanded to the device: 12 – Purchase	2N	F	12	C

	16 – Get Terminal Info 25 – Void 27 – Get Last Transaction 35 – Get Totals 36 – Settlement 39 – Get Parameter				
CrdHldrIDCod	Cardholder verification: @- Signature verified A – Pin verified				
CreditAmount	Total Credit Amount for card type				
CreditCount	Total Credit Transaction for card type				
Currency	ISO currency code	3N	F	784 (for AED)	M
DCC OrigAmount	Original Sale Amount in foreign currency	12N	V	1200 (for 12.00 AED)	C
DCC TipAmount	Amount of Tip Entered in foreign currency	12N	V	1200 (for 12.00 AED)	C
DCC_Currency	Currency for DCC supported	3A	F	AED	C
DccAmt	DCC amount to be processed	12N	V	1200 (for 12.00 AED)	C
DccCovFee	Coverage Fee of DCC	16AN	V	0.0000	C
DccExchgRate	Exchange rate	5AN	V	3.6	C
DccFrCur	Foreign currency	3A	F	IDR	C
DccMarkup	Difference of present exchange rate to previous exchange rate	16AN	V	5.250	C
DccSection	DCC identifier	Tag ID			C
DCCStatus	0 – DCC not offered 1 – DCC offered 2 – DCC offered but rejected by Cardholder	1N	F		C
DebitAmount	Total Debit Amount of Card Type				
DebitCount	Total Debit Transaction for card type				
DISABLESIM1	0 – Enabled 1 – Disabled	1A	F	0	M
DISABLESIM2	0 – Enabled 1 – Disabled	1A	F	0	M

EFTData	Structure of data sent from ECR to the device				M
EMVData	Identifier of EMV data section				C
EntryMode	Card Type that is used: I: Chip K: Manual Entry S: Magstripe T: Contactless	1A	F	I	
EPP	Easy payment plan (Installment)				C
ErrorCode	Equivalent value of error	4AN	F	E040	M
ErrorDescription	Description of the error encountered	50AN	V	Card removed while Completing EMV	C
ExpiryDate	Card Expiry Date	6AN	F	****	O
Fallback	0 – No Fallback 1 -Fallback from MagStripe to manual entry 2- Fallback from chip to MagStripe 3 – Fallback from contactless to contact	1A	F	1	M
GrandQtyOfDebits	Number of Debit Transactions	4N	V	3	M
GrandQtyOfCredits	Number of Credit Transactions	4N	V	3	M
GrandValueOfDebits	Total amount of Debit Transactions	12N	V	300	M
GrandValueOfCredits	Total amount of Credit Transactions	12N	V	300	M
LocalAmt	Amount in Local currency	13AN	V	10.00	C
LocalCur	Local Currency			AED	C
MaskCardNumber	Card number masked with *. First 6 and last 4 digits of the card are not masked.	19AN	V	442780******9778	M
MdcAmount	Amount of Transaction	13AN	V	10.00	C
MERCHANTADDRESSLINE1	Merchant Address	50AN	V	Chicago,USA	M
MERCHANTNAME	Merchant Name	50AN	V	OMABranch	M
MID	Merchant ID to be printed in transaction receipt header	15N	V	123456789012	M

MREFLabel	Merchant Specific Label configured @TMS	25AN	V	CUSTOMER ID	O
MREFValue	Merchant Specific Value to get the input from terminal / passed by ECR with MREFLabel as heading	22AN	V	78419	O
NoB	No Business for this card type	TAG			
ONLINESTATUS	Offline transaction identifier	7A	F	OFFLINE	O
PinEntryTimeOut	Timeout for the Pin Input Screen	3N	F	180	O
PlanID	EPP Plan ID	12N	V	20002	C
PrintOpt	Whether the receipt has to be printed according to TMS settings or ECR options. ECR can override (not overwritten) the option from the TMS. This is only for the current transaction. PrintOpt will not overwrite the TMS parameter.	1A	F	1	M
R	Records that contains below Tags	TAG			
ReceiptNo	Receipt number of transaction	6N	F	123456	M
ResponseCode	Response code received from Host or generated by terminal	2AN	F	0	O
ResponseDescription	Description of the response code	48AN	V	APPROVED	O
Reversed	If transaction is reversed 1: Yes 0: No	1N	F	0	M
RRN	Retrieval Reference Number	12AN	F	1.23457E+11	M
SelectedPlanOption	Selected Plan for Installment section	TAG			C
SerialNo	POS Terminal Device Serial Number	10N	V	123456789	M
SIMPRIORITY	1 – Sim 1 2 – Sim 2	1A	F	1	M

Status	Approved/Rejected	8AN	V	APPROVED	M
Tenure	Period of time for EPP	3N	V	12	C
TID	Terminal ID to be used by the terminal as defined on the Terminal Management System.	8N	F	345678	M
TipAmount	Amount of Tip Entered in local currency	12N	V	100(for1.00 aed)	C
TotalAmount	Total of sale amount and Tip Amount in local currency	12N	V	1000(for 10.00 AED)	C
TotalTransactionAmount	Net Amount for Card Type.				
TotalTransactionCount	Net count for Card type				
TotalQtyOfDebits	Number of Debit Transactions per card scheme	4N	V	3	M
TotalQtyOfCredits	Number of Credit Transactions per card scheme	4N	V	3	M
TotalValueOfDebits	Total amount of Debit Transactions per card scheme	12N	V	300	M
TotalValueOfCredits	Total amount of Credit Transactions per card scheme	12N	V	300	M
TSI	EMV Transaction Status Information	4H	F	F800	C
TVR	EMV Terminal Verification Result	10H	F	80000000	C
TX	Group Tag with Details of all transaction for the card type				

TXNSTATUS	Identifies the status of the Transaction. OK: Transaction is successful RE: Timeout or Receive exception and a Reversal is done. PE: Parse Exception while parsing the response message and hence a reversal is done. PR: Processing Exception CD: host approved the transaction , but Card is removed from the terminal or Txn is declined by the card and hence a reversal happened (Card Decline)	2AN	F	OK	M
Void Indicator	Present only, if transaction is voided				
Xout	Group Tag Includes Card wise Transactions details and Summary details				
Zout	Group Tag for summary of each card type				
SelectedOnPos	Tag if present DCC and EPP confirmation already asked on POS				

Condition Table

C4	Mandatory in CHIP transactions.
C5	Present Only if authorization host sends it.
C6	Present Only if DCC enabled terminal.

Error Codes

Error Code	Description
E000	No Error
E001	Command Not Valid
E002	Card Insertion Timed out
E003	Transaction Aborted by user
E004	Run time exception
E006	ICC Exception

E007	Transaction cancelled by the operator
E009	ATM only exception
E010	Pin Timeout Exception
E011	Connection Exception
E012	Send Exception
E013	Receive Exception
E014	Reversal Send Exception
E015	Reversal Receive Exception
E017	Crypto Exception
E018	Invalid Track
E019	Invalid Bin - Card not supported
E020	Invalid Luhn Check
E021	Card Expired
E022	Xml Format Mismatch Error
E023	Timeout for waiting Command
E024	Card Was not Removed when starting transaction
E025	Terminal not Initialized
E027	Database error
E028	Communication failure
E030	Transaction Not Found
E031	Transaction permission denied
E034	Card blocked
E035	Application Blocked
E037	Operation cancelled / Card inserted in wrong way & operation cancelled
E038	Program download failed
E039	Amount Exceeded for terminal- Exception
E040	Card removed while Completing EMV
E043	Batch Empty
E045	Reversal Incomplete
E046	Timeout Exception
E047	Amount Mismatch
E048	Invalid Receipt Number
E049	Txn already voided
E050	EOD Incomplete/Advice Incomplete
E051	Advices storage full
E052	Advices not completed
E053	Contactless Read Exception

E054	Issue with chip on card, transaction not permitted
E055	Hardware not supported/ Barcode not supported
E056	Terminal is not configured/Config terminal first
E058	Card input time out
E059	Wrong password
E060	Chip Error
E061	Swipe only
E062	Low battery
E063	Key entry limit exceeded
E064	Disk Error
E065	Host Exception
E066	Please settle batch
E067	Mismatch pan last digits
E068	Invalid CA key count
E069	Please set PCL mode
E070	Invalid Amount
E071	Must Do Logon
E072	Batch is Full, please settle
E073	Reversal is Full, please settle
E074	Advice Incomplete
E075	PLEASE INJECT KEY (If TGKIT APPLICATION IS LOADED)
E076	ZERO AMOUNT NOT ACCEPTED
E077	Standalone mode not accepted for ISMP/ICMP device.
E078	GPRS CONNECTION EXCEPTION: REBOOT REQUIRED
E079	Sim is disabled. Please Enable Sim before setting Priority.
E080	Parameter download after Settlement failed.
E081	Dual sim not supported.
E084	Card Not Accepted
E085	Card Service Code Not Accepted
E086	Printer not found
E087	Pin By Pass Not Allowed
E088	Check Last Transaction status
E094	Reversal happen on current transactions
E999	General Error
E06/E099	No response from POS/ DLL timeout.
E180	No device detected
E181	USB Re-connecting

E182	USB Disconnected
E183	Access denied to COM'X'
E04	Operational exception

Response Code

Response Code	Description
A0	Pin time out
C0	Transaction failed
C1	Card removed
C2	Transaction cancelled
DC	Declined offline
IA	Invalid authcode
N3	Cash service not available
N4	Cashback request exceeds user limit
N7	Decline for cvv2 failure
OD	Offline declined
P2	Invalid biller information
P5	Pin change/unblock request declined
P6	Unsafe pin
Q1	Card authentication failed
R0	Stop payment order
R1	Revocation of authorization order
R3	Revocation of all auth order
VC	Preauth verification comm failure- sg response code
XA	Forward to issuer
XD	Forward to issuer
00	Approved
01	Refer to card issuer
01	Reconciled, out of balance**
02	Referral
03	Error-call help- sn
03	Totals not available**
04	Not, reconciled totals provided**
05	Do not honour
07	Request in progress
09	Request in progress
12	Invalid transaction

13	Invalid amount
14	Invalid card number
19	Reenter transaction
21	Security error no action
23	Unacceptable fee
24	File action not supported
25	Unable to locate record on file
27	File field edit error
28	File locked out
29	File action not successful
30	Format error
31	Bank not supported by switch
33	Expired card pick up
34	Suspected fraud pick up card
35	Contact acq pick up card
36	Restricted card pick up card
37	Call acq sec pick up card
38	Pin tries exceeded pick up card
40	Func not supported
41	Please call-lost card
43	Pickup card
51	Not sufficient funds
53	No a/c of req type**
54	Expired card
55	Incorrect pin
56	No card record
57	Transaction not permitted to cardholder
58	Transaction not permitted to terminal
59	Suspected fraud
61	Exceeds withdraw limit
62	Restricted card
63	Security violation
65	Exceeds withdraw frequency limit
66	Call acquirer security
67	Call acquirer security
68	Card issuer timed out

77	Repeat/reversal:inconsistent data with orig msg
86	Cannot verify pin
90	Cash back not allowed
91	Issuer or switch inoperative
92	Destination cannot be found for routing
93	Txn cannot be completed
94	Duplicate transmission
95	Reconcile error
96	System malfunction
97	Approved offline
98	Declined offline
99	Declined by card

**** Response Code from Host**

Command Type

Command Type	Transaction Description
12	Purchase
16	Get Terminal Info
25	Void
27	Last Transaction
28	Stand Alone Mode
34	Config Terminal
35	Get Totals
36	Settlement
38	Refund
39	Update Parameter
40	Scan Barcode
43	Program Download
44	EPP Completion
45	Dcc Completion
46	Offline Sale
49	XReport
50	ZReport
53	Send Pending Advices
54	Send Pending Reversals
55	Set Config

Intermediate Messages

Command Type	Transaction Description
001	Enter card displayed
002	Card Inserted
003	Fallback

004	Swipe Card
005	Card Swiped
006	Enter Pin
007	Pin Entered
008	Transaction Online
009	Response Received
010	Printing Receipt
011	Remove Card
012	Card Removed
013	Transaction Successful
014	Transaction Failed
015	Transaction Reversed
016	Wait For Logo
017-024	Reserved for Future Use
025	DCC Rate Look up
026	DCC Offer Screen
027	DCC OPT IN
028	DCC OPT OUT
029	DCC Selection Cancelled
030	DCC Selection Wait
031	Fallback Contactless to Contact
032	Out of Paper, replace paper roll
033	Enter Tip Amount
034 -041	Reserved for Future Use
042	PIN By Pass Entered
043	Reserved for Future Use
044	Contactless(Tap card)
045-047	Reserved for Future Use
048	Enter MREF
049	MREF Entered
050	Sending Reversal
051	Reversal Response Received

Appendix B - Final Response Message

Get Totals

Request

<EFTData><CommandType>35</CommandType></EFTData>

Response

<EFTData><CommandType>35</CommandType><ErrorCode>E000</ErrorCode><TID>10000006</TID><MID>111111111</MID><BatchNo>000002</BatchNo><TransactionDate>0318</TransactionDate><TransactionTime>142734</TransactionTime><DebitCount>3</DebitCount><DebitAmount>3200</DebitAmount><CreditCount>0</CreditCount><CreditAmount>0</CreditAmount><TotalTransactionCount>3</TotalTransactionCount><TotalTransactionAmount>3200</TotalTransactionAmount><ErrorDescription>No Error</ErrorDescription></EFTData>

Settlement

Request

<EFTData><CommandType>36</CommandType></EFTData>

Response

<EFTData><ErrorCode>E080</ErrorCode><Status>BATCH ACCEPTED</Status><MREFLabel>LTRFB</MREFLabel><MREFValue>3697</MREFValue><ErrorDescription>Parameter download after Settlement failed.</ErrorDescription></EFTData>

Get Terminal Info

Request

<EFTData><CommandType>16</CommandType></EFTData>

Response

<EFTData><CommandType>16</CommandType><ErrorCode>E000</ErrorCode><AppVersion>1.08</AppVersion><AppDate>Mar172019</AppDate><AppTime>09:58:21</AppTime><SerialNo>03082303</SerialNo><TID>10000006</TID><MID>111111111</MID><AUTHPRIIPADDRESS>172.017.014.188</AUTHPRIIPADDRESS><AUTHPRIPORT>4444</AUTHPRIPORT><AUTHSECIPADDRESS>172.017.014.188</AUTHSECIPADDRESS><AUTHSECPORT>172.017.014.188</AUTHSECPORT><APN>NBAD.COM</APN><APN2>NBAD.COM</APN2><DISABLESIM1>1</DISABLESIM1><DISABLESIM2>1</DISABLESIM2><CommunicationMode>0</CommunicationMode><TLS>0</TLS><TLSTYPE>0</TLSTYPE><CardEntryTimeOut>7</CardEntryTimeOut><PinEntryTimeOut>10</PinEntryTimeOut><MREFLabel>LTRFB</MREFLabel><MREFValue>1245</MREFValue> <ErrorDescription>No Error</ErrorDescription></EFTData>

Get Parameter

Request

<EFTData><CommandType>39</CommandType></EFTData>

Response

<EFTData><CommandType>39</CommandType><ErrorCode>E000</ErrorCode><TID>10000006</TID><MERCHANTNAME>OMA Branch</MERCHANTNAME><MERCHANTADDRESSLINE1>ss3</MERCHANTADDRESSLINE1><MID>111111111 </MID><RECEIPTFOOTERLINE1>THANK YOU " VISIT AGAIN. "</RECEIPTFOOTERLINE1><RECEIPTFOOTERLINE2> * PLEASE COME AGAIN</RECEIPTFOOTERLINE2><ErrorDescription>No Error</ErrorDescription></EFTData>

Purchase-Contactless

Request

<EFTData><CommandType>12</CommandType><Amount>1000</Amount><MREFValue>1234</MREFValue></EFTData>

Response

<EFTData><CommandType>12</CommandType><ErrorCode>E000</ErrorCode><MERCHANTNAME>OMA Branch</MERCHANTNAME><MERCHANTADDRESSLINE1>ss3</MERCHANTADDRESSLINE1><TransactionResult>APPROVED</TransactionResult><ResponseCode>00</ResponseCode><TransactionType>D</TransactionType><TID>10000006</TID><MID>111111111</MID><AppVersion>1.08</AppVersion><TransactionDate>190318</TransactionDate><TransactionTime>100114</TransactionTime><BatchNo>000001</BatchNo><ReceiptNo>000048</ReceiptNo><CardSchemeName>MASTERCARD</CardSchemeName><MaskCardNumber>526408******6353</MaskCardNumber><ExpiryDate>****</ExpiryDate><Amount>1000</Amount><Currency>784</Currency><TxnStatus>OK</TxnStatus><AuthCode>005738</AuthCode><EntryMode>T</EntryMode><RRN>000000224345</RRN><CHVerify>3</CHVerify><Fallback>0</Fallback><EM

VData><ApplicationLabel>Debit Mastercard</ApplicationLabel><AID>A0000000041010</AID><TVR>0000008001</TVR><AC>29912916E0B50454</AC><CID>80</CID><PanSeqNo>000</PanSeqNo></EMVData><MREFLabel>MREFNumber</MREFLabel><MREFValue>1234</MREFValue><ErrorDescription>No Error</ErrorDescription></EFTData>

**Please refer to Response Codes for description

Purchase-Chip

Request

<EFTData><CommandType>12</CommandType><Amount>1000</Amount><MREFValue>1234</MREFValue></EFTData>

Response

<EFTData><CommandType>12</CommandType><EPP>1</EPP><ErrorCode>E000</ErrorCode><MERCHANTNAME>Branch</MERCHANTNAME><MERCHANTADDRESSLINE1>ss3</MERCHANTADDRESSLINE1><TransactionResult>APPROVED</TransactionResult><ResponseCode>00</ResponseCode><TransactionType>D</TransactionType><TID>10000006</TID><MID>111111111</MID><AppVersion>1.08</AppVersion><TransactionDate>190318</TransactionDate><TransactionTime>095242</TransactionTime><BatchNo>000001</BatchNo><ReceiptNo>000046</ReceiptNo><CardSchemeName>MASTERCARD</CardSchemeName><MaskCardNumber>542160******6849</MaskCardNumber><ExpiryDate>****</ExpiryDate><CardHolderName>GENERAL/TEST</CardHolderName><Amount>1000</Amount><Currency>784</Currency><TxnStatus>OK</TxnStatus><AuthCode>005737</AuthCode><EntryMode>I</EntryMode><RRN>000000224342</RRN><CHVerify>3</CHVerify><Fallback>0</Fallback><EMVData><ApplicationLabel>MASTERCARD</ApplicationLabel><AID>A0000000041010</AID><TVR>0000088000</TVR><TSI>E800</TSI><AC>1A75577A90EB9748</AC><CID>40</CID><PanSeqNo>001</PanSeqNo></EMVData><InstallPlanSection><SelectedPlanOption><PlanID>20002</PlanID><Tenure>12</Tenure></SelectedPlanOption></InstallPlanSection><MREFLabel>MREFNumber</MREFLabel><MREFValue>1234</MREFValue><ErrorDescription>No Error</ErrorDescription></EFTData>

Purchase-Swipe

Request

<EFTData><CommandType>12</CommandType><Amount>1000</Amount><MREFValue>1234</MREFValue></EFTData>

Response

<EFTData><CommandType>12</CommandType><IsDcc>1</IsDcc><ErrorCode>E000</ErrorCode><MERCHANTNAME>OMA Branch</MERCHANTNAME><MERCHANTADDRESSLINE1>ss3</MERCHANTADDRESSLINE1><TransactionResult>APPROVED</TransactionResult><ResponseCode>00</ResponseCode><TransactionType>D</TransactionType><TID>10000006</TID><MID>111111111</MID><AppVersion>1.08</AppVersion><TransactionDate>190320</TransactionDate><TransactionTime>135435</TransactionTime><BatchNo>000001</BatchNo><ReceiptNo>000011</ReceiptNo><CardSchemeName>MASTERCARD</CardSchemeName><MaskCardNumber>541333******3511</MaskCardNumber><ExpiryDate>****</ExpiryDate><CardHolderName>CUST IMP MC 351/</CardHolderName><Amount>1000</Amount><Currency>784</Currency><TxnStatus>OK</TxnStatus><AuthCode>00760Z</AuthCode><EntryMode>S</EntryMode><RRN>000000224720</RRN><CHVerify>3</CHVerify><Fallback>0</Fallback><DccSection><DccFrCur>IDR</DccFrCur>

<DccAmt>000003844362</DccAmt><LocalCur>AED</LocalCur><LocalAmt>1000</LocalAmt><DccExchgRate>3844.3615000</DccExchgRate><DccMarkup>5.250</DccMarkup><DccCovFee>0.0000</DccCovFee></DccSection><MREFLabel>MREFNumber</MREFLabel><MREFValue>1234</MREFValue><ErrorDescription>No Error</ErrorDescription></EFTData>

Purchase-Manual Entry

Request

<EFTData><CommandType>12</CommandType><Amount>1200</Amount><MREFValue>1234</MREFValue></EFTData>

Response

<EFTData><CommandType>12</CommandType><ErrorCode>E000</ErrorCode><MERCHANTNAME>OMA Branch</MERCHANTNAME><MERCHANTADDRESSLINE1>ss3</MERCHANTADDRESSLINE1><TransactionResult>APPROVED</TransactionResult><ResponseCode>00</ResponseCode><TransactionType>D</TransactionType><TID>10000006</TID><MID>111111111</MID><AppVersion>1.08</AppVersion><TransactionDate>190318</TransactionDate><TransactionTime>091145</TransactionTime><BatchNo>000001</BatchNo><ReceiptNo>000042</ReceiptNo><CardSchemeName>MASTERCARD</CardSchemeName><MaskCardNumber>542933******1742</MaskCardNumber><ExpiryDate>****</ExpiryDate><Amount>1200</Amount><Currency>784</Currency><TxnStatus>OK</TxnStatus><AuthCode>005734</AuthCode><EntryMode>K</EntryMode><RRN>000000224333</RRN><CHVerify>3</CHVerify><Fallback>0</Fallback><MREFLabel>MREFNumber</MREFLabel><MREFValue>1234</MREFValue><ErrorDescription>No Error</ErrorDescription></EFTData>

Purchase-Fallback Swipe

Request

<EFTData><CommandType>12</CommandType><Amount>1100</Amount><MREFValue>1234</MREFValue></EFTData>

Response

<EFTData><CommandType>12</CommandType><ErrorCode>E000</ErrorCode><MERCHANTNAME>OMA Branch</MERCHANTNAME><MERCHANTADDRESSLINE1>ss3</MERCHANTADDRESSLINE1><TransactionResult>APPROVED</TransactionResult><ResponseCode>00</ResponseCode><TransactionType>D</TransactionType><TID>10000006</TID><MID>111111111</MID><AppVersion>1.08</AppVersion><TransactionDate>190318</TransactionDate><TransactionTime>090456</TransactionTime><BatchNo>000001</BatchNo><ReceiptNo>000040</ReceiptNo><CardSchemeName>MASTERCARD</CardSchemeName><MaskCardNumber>542933******1742</MaskCardNumber><ExpiryDate>****</ExpiryDate><CardHolderName>SUNDARARAJAN</CardHolderName><Amount>1100</Amount><Currency>784</Currency><TxnStatus>OK</TxnStatus><AuthCode>005733</AuthCode><EntryMode>S</EntryMode><RRN>000000224328</RRN><CHVerify>3</CHVerify><Fallback>2</Fallback><MREFLabel>MREFNumber</MREFLabel><MREFValue>1234</MREFValue><ErrorDescription>No Error</ErrorDescription></EFTData>

Refund

Request

<EFTData><CommandType>38</CommandType><Amount>1000</Amount><MREFValue>1234</MREFValue></EFTData>

Response

<EFTData><CommandType>38</CommandType><ErrorCode>E000</ErrorCode><MERCHANTNAME>OMA Branch</MERCHANTNAME><MERCHANTADDRESSLINE1>ss3</MERCHANTADDRESSLINE1><TransactionResult>APPROVED</TransactionResult><ResponseCode>00</ResponseCode><TransactionType>C</TransactionType><TID>10000006</TID><MID>111111111</MID><AppVersion>1.08</AppVersion><TransactionDate>190327</TransactionDate><TransactionTime>153855</TransactionTime><BatchNo>000001</BatchNo><ReceiptNo>000090</ReceiptNo><CardSchemeName>MASTERCARD</CardSchemeName><MaskCardNumber>542160******7918</MaskCardNumber><ExpiryDate>****</ExpiryDate><CardHolderName>FAMILY1/TEST.MR</CardHolderName><Amount>10.00</Amount><Currency>784</Currency><TxnStatus>OK</TxnStatus><AuthCode>B25162</AuthCode><EntryMode>I</EntryMode><RRN>000000225508</RRN><CHVerify>3</CHVerify><Fallback>0</Fallback><MREFLabel>MREFNumber</MREFLabel><MREFValue>1234</MREFValue><ErrorDescription>No Error</ErrorDescription></EFTData>

Reversal

Request

<EFTData><CommandType>45</CommandType><DccOpt>2</DccOpt></EFTData>

Response

<EFTData><CommandType>12</CommandType><ErrorCode>E040</ErrorCode><MERCHANTNAME>OMABranch</MERCHANTNAME><MERCHANTADDRESSLINE1>ss3</MERCHANTADDRESSLINE1><TransactionResult>APPROVED</TransactionResult><ResponseCode>00</ResponseCode><TransactionType>D</TransactionType><Reversed>1</Reversed><TID>10000006</TID><MID>111111111</MID><AppVersion>1.08</AppVersion><TransactionDate>190320</TransactionDate><TransactionTime>151023</TransactionTime><BatchNo>000001</BatchNo><ReceiptNo>0000

30</ReceiptNo><CardSchemeName>MASTERCARD</CardSchemeName><MaskCardNumber>528647******0717</MaskCardNumber><ExpiryDate>****</ExpiryDate><CardHolderName>D/TEST</CardHolderName><Amount>1000</Amount><Currency>784</Currency><TxnStatus>OK</TxnStatus><AuthCode>007621</AuthCode><EntryMode>I</EntryMode><RRN>000000224758</RRN><CHVerify>3</CHVerify><Fallback>0</Fallback><EMVData><ApplicationLabel>MASTERCARD</ApplicationLabel><AID>A0000000041010</AID><TVR>0000088000</TVR><TSI>E800</TSI><AC>FD8B08EEB0E57F3E</AC><CID>80</CID><PanSeqNo>001</PanSeqNo></EMVData><ErrorDescription>Card removed while Completing EMV</ErrorDescription></EFTData>

Void Purchase-Contactless

Request

<EFTData><CommandType>25</CommandType><Amount>1000</Amount>><MREFValue>1234</MREFValue><ReceiptNo>48</ReceiptNo></EFTData>

Response

<EFTData><CommandType>25</CommandType><ErrorCode>E000</ErrorCode><MERCHANTNAME>OMA Branch</MERCHANTNAME><MERCHANTADDRESSLINE1>ss3</MERCHANTADDRESSLINE1><TransactionResult>APPROVED</TransactionResult><ResponseCode>00</ResponseCode><TransactionType>C</TransactionType><TID>10000006</TID><MID>111111111</MID><AppVersion>1.08</AppVersion><TransactionDate>190318</TransactionDate><TransactionTime>100155</TransactionTime><BatchNo>000001</BatchNo><ReceiptNo>000048</ReceiptNo><CardSchemeName>MASTERCARD</CardSchemeName><MaskCardNumber>526408******6353</MaskCardNumber><ExpiryDate>****</ExpiryDate><Amount>1000</Amount><Currency>784</Currency><TxnStatus>OK</TxnStatus><AuthCode>005738</AuthCode><EntryMode>T</EntryMode><RRN>000000224345</RRN><OrgCommandType>12</OrgCommandType><MREFLabel>MREFNumber</MREFLabel><MREFValue>1234</MREFValue><ErrorDescription>No Error</ErrorDescription></EFTData>

Void Purchase-Chip

Request

<EFTData><CommandType>25</CommandType><Amount>25000</Amount>><MREFValue>1234</MREFValue><ReceiptNo>6</ReceiptNo></EFTData>

Response

<EFTData><CommandType>25</CommandType><ErrorCode>E000</ErrorCode><MERCHANTNAME>OMA Branch</MERCHANTNAME><MERCHANTADDRESSLINE1>ss3</MERCHANTADDRESSLINE1><TransactionResult>APPROVED</TransactionResult><ResponseCode>00</ResponseCode><TransactionType>C</TransactionType><TID>10000006</TID><MID>111111111</MID><AppVersion>1.08</AppVersion><TransactionDate>190321</TransactionDate><TransactionTime>091809</TransactionTime><BatchNo>000002</BatchNo><ReceiptNo>000015</ReceiptNo><CardSchemeName>MASTERCARD</CardSchemeName><MaskCardNumber>528647******0717</MaskCardNumber><ExpiryDate>****</ExpiryDate><CardHolderName>D/TEST</CardHolderName><Amount>250.00</Amount><Currency>784</Currency><TxnStatus>OK</TxnStatus><AuthCode>007645</AuthCode><EntryMode>I</EntryMode><RRN>000000224822</RRN><OrgCommandType>44</OrgCommandType><MREFLabel>MREFNumber</MREFLabel><MREFValue>1234</MREFValue><ErrorDescription>No Error</ErrorDescription></EFTData>

Void Purchase-Swipe

Request

<EFTData><CommandType>25</CommandType><Amount>1000</Amount>><MREFValue>1234</MREFValue><ReceiptNo>000040</ReceiptNo></EFTData>

Response

<EFTData><CommandType>25</CommandType><ErrorCode>E000</ErrorCode><MERCHANTNAME>OMA Branch</MERCHANTNAME><MERCHANTADDRESSLINE1>ss3</MERCHANTADDRESSLINE1><TransactionResult>APPROVED</TransactionResult><ResponseCode>00</ResponseCode><TransactionType>C</TransactionType><TID>10000006</TID><MID>111111111</MID><AppVersion>1.08</AppVersion><TransactionDate>190320</TransactionDate><TransactionTime>135520</TransactionTime><BatchNo>000001</BatchNo><ReceiptNo>000011</ReceiptNo><CardSchemeName>MASTERCARD</CardSchemeName><MaskCardNumber>541333******3511</MaskCardNumber><ExpiryDate>****</ExpiryDate><CardHolderName>CUST IMP MC 351/</CardHolderName><Amount>1000</Amount><Currency>784</Currency><TxnStatus>OK</TxnStatus><AuthCode>00760Z</AuthCode><EntryMode>S</EntryMode><RRN>000000224720</RRN><OrgCommandType>45</OrgCommandType><DccSection><DccFrCur>IDR</DccFrCur><DccAmt>000003844362</DccAmt><LocalCur>AED</LocalCur><LocalAmt>1000</LocalAmt><DccExchgRate>3844.3615000</DccExchgRate><DccMarkup>5.250</DccMarkup></DccSection><MREFLabel>MREFNumber</MREFLabel><MREFValue>1234</MREFValue><ErrorDescription>No Error</ErrorDescription></EFTData>

Void Purchase-Manual Entry

Request

<EFTData><CommandType>25</CommandType><Amount>1200</Amount>><MREFValue>1234</MREFValue><ReceiptNo>000042</ReceiptNo></EFTData>

Response

<EFTData><CommandType>25</CommandType><ErrorCode>E000</ErrorCode><MERCHANTNAME>OMA Branch</MERCHANTNAME><MERCHANTADDRESSLINE1>ss3</MERCHANTADDRESSLINE1><TransactionResult>APPROVED</TransactionResult><ResponseCode>00</ResponseCode><TransactionType>C</TransactionType><TID>10000006</TID><MID>111111111</MID><AppVersion>1.08</AppVersion><TransactionDate>190318</TransactionDate><TransactionTime>091308</TransactionTime><BatchNo>000001</BatchNo><ReceiptNo>000042</ReceiptNo><CardSchemeName>MASTERCARD</CardSchemeName><MaskCardNumber>542933******1742</MaskCardNumber><ExpiryDate>****</ExpiryDate><Amount>1200</Amount><Currency>784</Currency><TxnStatus>OK</TxnStatus><AuthCode>005734</AuthCode><EntryMode>K</EntryMode><RRN>000000224333</RRN><OrgCommandType>12</OrgCommandType><MREFLabel>MREFNumber</MREFLabel><MREFValue>1234</MREFValue><ErrorDescription>No Error</ErrorDescription></EFTData>

Void Purchase-Fallback Swipe

Request

<EFTData><CommandType>25</CommandType><Amount>1100</Amount>><MREFValue>1234</MREFValue><ReceiptNo>000040</ReceiptNo></EFTData>

Response

<EFTData><CommandType>25</CommandType><ErrorCode>E000</ErrorCode><MERCHANTNAME>OMA

Branch</MERCHANTNAME><MERCHANTADDRESSLINE1>ss3</MERCHANTADDRESSLINE1><TransactionResult>APPROVED</TransactionResult><ResponseCode>00</ResponseCode><TransactionType>C</TransactionType><TID>10000006</TID><MID>111111111
</MID><AppVersion>1.08</AppVersion><TransactionDate>190318</TransactionDate><TransactionTime>090706</TransactionTime><BatchNo>000001</BatchNo><ReceiptNo>000040</ReceiptNo><CardSchemeName>MASTERCARD</CardSchemeName><MaskCardNumber>542933******1742</MaskCardNumber><ExpiryDate>****</ExpiryDate><CardHolderName>SUNDARARAJAN</CardHolderName><Amount>1100</Amount><Currency>784</Currency><TxnStatus>OK</TxnStatus><AuthCode>005733</AuthCode><EntryMode>S</EntryMode><RRN>000000224328</RRN><OrgCommandType>12</OrgCommandType><MREFLabel>MREFNumber</MREFLabel><MREFValue>1234</MREFValue><ErrorDescription>No Error</ErrorDescription></EFTData>

Void Refund

Request

<EFTData><CommandType>25</CommandType><Amount>1000</Amount>><MREFValue>1234</MREFValue><ReceiptNo>90</ReceiptNo></EFTData>

Response

<EFTData><CommandType>25</CommandType><ErrorCode>E000</ErrorCode><MERCHANTNAME>OMA
Branch</MERCHANTNAME><MERCHANTADDRESSLINE1>ss3</MERCHANTADDRESSLINE1><TransactionResult>APPROVED</TransactionResult><ResponseCode>00</ResponseCode><TransactionType>D</TransactionType><TID>10000006</TID><MID>111111111
</MID><AppVersion>1.08</AppVersion><TransactionDate>190327</TransactionDate><TransactionTime>153940</TransactionTime><BatchNo>000001</BatchNo><ReceiptNo>000090</ReceiptNo><CardSchemeName>MASTERCARD</CardSchemeName><MaskCardNumber>542160******7918</MaskCardNumber><ExpiryDate>****</ExpiryDate><CardHolderName>FAMILY1/TEST.MR</CardHolderName><Amount>10.00</Amount><Currency>784</Currency><TxnStatus>OK</TxnStatus><AuthCode>B25162</AuthCode><EntryMode>I</EntryMode><RRN>000000225508
</RRN><OrgCommandType>38</OrgCommandType><MREFLabel>MREFNumber</MREFLabel><MREFValue>1234</MREFValue><ErrorDescription>No Error</ErrorDescription></EFTData>

Get Last Transaction Purchase-Contactless

Request

<EFTData><CommandType>27</CommandType></EFTData>

Response

<EFTData><CommandType>27</CommandType><ErrorCode>E000</ErrorCode><MERCHANTNAME>OMA
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No></EMVData><MREFLabel>MREFNumber</MREFLabel><MREFValue>1234</MREFValue><ErrorDescription>No Error</ErrorDescription></EFTData>

Get Last Transaction Purchase-Chip

Request

<EFTData><CommandType>27</CommandType></EFTData>

Response

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Get Last Transaction Purchase-Swipe

Request

<EFTData><CommandType>27</CommandType></EFTData>

Response

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Get Last Transaction Purchase-Manual Entry

Request

<EFTData><CommandType>27</CommandType></EFTData>

Response

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Get Last Transaction Purchase-Fallback Swipe

Request

<EFTData><CommandType>27</CommandType></EFTData>

Response

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Get Last Transaction Refund

Request

<EFTData><CommandType>27</CommandType></EFTData>

Response

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</RRN><CHVerify>3</CHVerify><Fallback>0</Fallback><EMVData><ApplicationLabel>MasterCard</ApplicationLabel><AID>A0000000041010</AID><TVR>8000000000</TVR><TSI>2000</TSI><AC>D6FB31C8312E4D44</AC><CID>00</CID><PanSeqNo>000</PanSeqNo></EMVData><MREFLabel>MREFNumber</MREFLabel><MREFValue>1234</MREFValue><ErrorDescription>No Error</ErrorDescription></EFTData>

Get Last Transaction Void Purchase-Contactless

Request

<EFTData><CommandType>27</CommandType></EFTData>

Response

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Get Last Transaction Void Purchase-Chip

Request

<EFTData><CommandType>27</CommandType></EFTData>

Response

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Get Last Transaction Void Purchase-Swipe

Request

<EFTData><CommandType>27</CommandType></EFTData>

Response

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Get Last Transaction Void Purchase-Manual Entry

Request

<EFTData><CommandType>27</CommandType></EFTData>

Response

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Get Last Transaction Void Purchase-Fallback Swipe

Request

<EFTData><CommandType>27</CommandType></EFTData>

Response

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ptNo><CardSchemeName>MASTERCARD</CardSchemeName><MaskCardNumber>542933******1742</MaskCardNumber><ExpiryDate>****</ExpiryDate><CardHolderName>SUNDARARAJAN</CardHolderName><Amount>1100</Amount><Currency>784</Currency><TxnStatus>OK</TxnStatus><AuthCode>005733</AuthCode><EntryMode>S</EntryMode><RRN>000000224328</RRN><OrgCommandType>12</OrgCommandType><MREFLabel>MREFNumber</MREFLabel><MREFValue>1234</MREFValue><ErrorDescription>No Error</ErrorDescription></EFTData>

Get Last Transaction Void Refund

Request

<EFTData><CommandType>27</CommandType></EFTData>

Response

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Get Last Transaction Reversal

Request

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Response

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X-Report

Request

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Response

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Z-Report

Request

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Response

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Request

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Response

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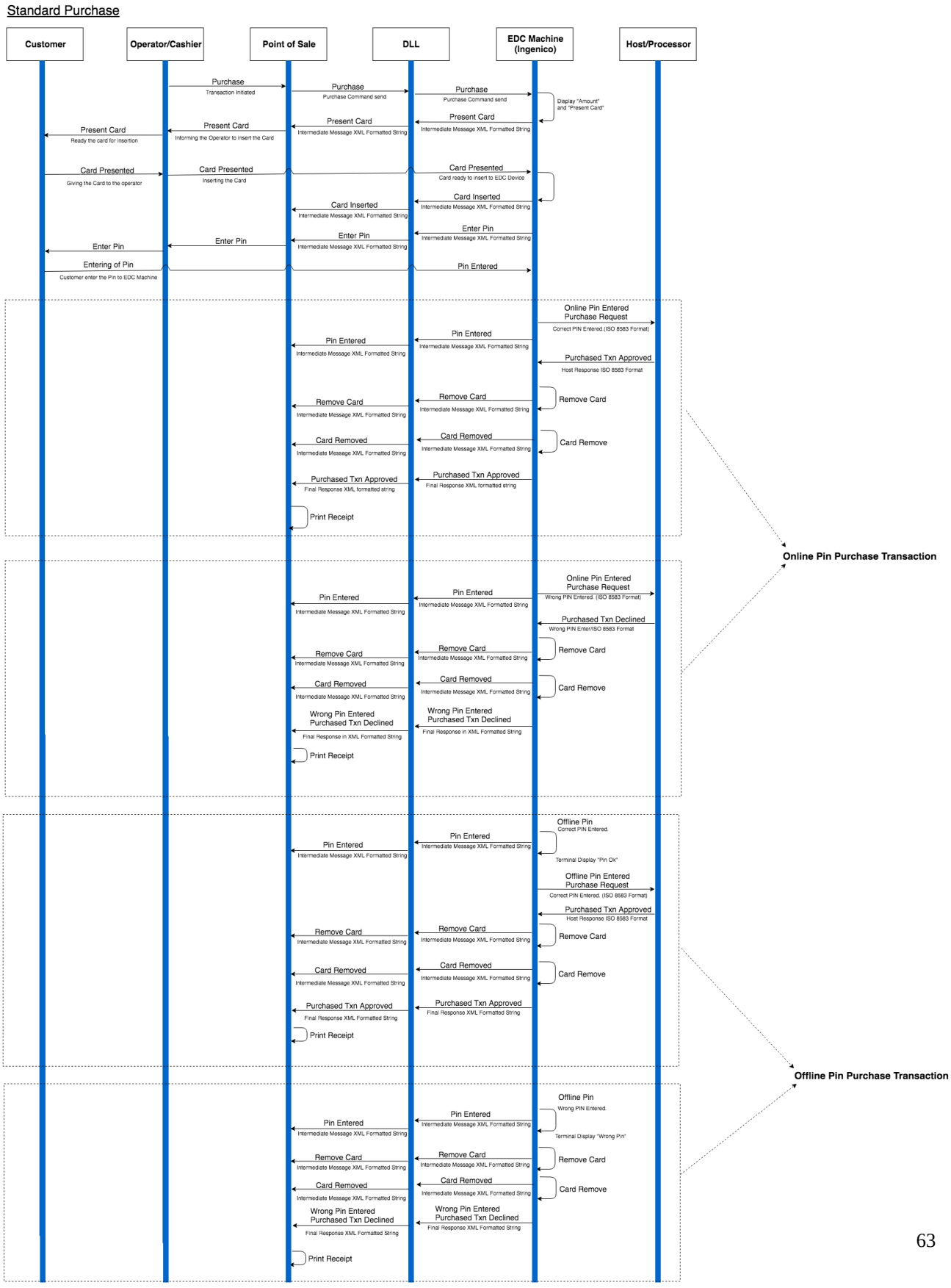
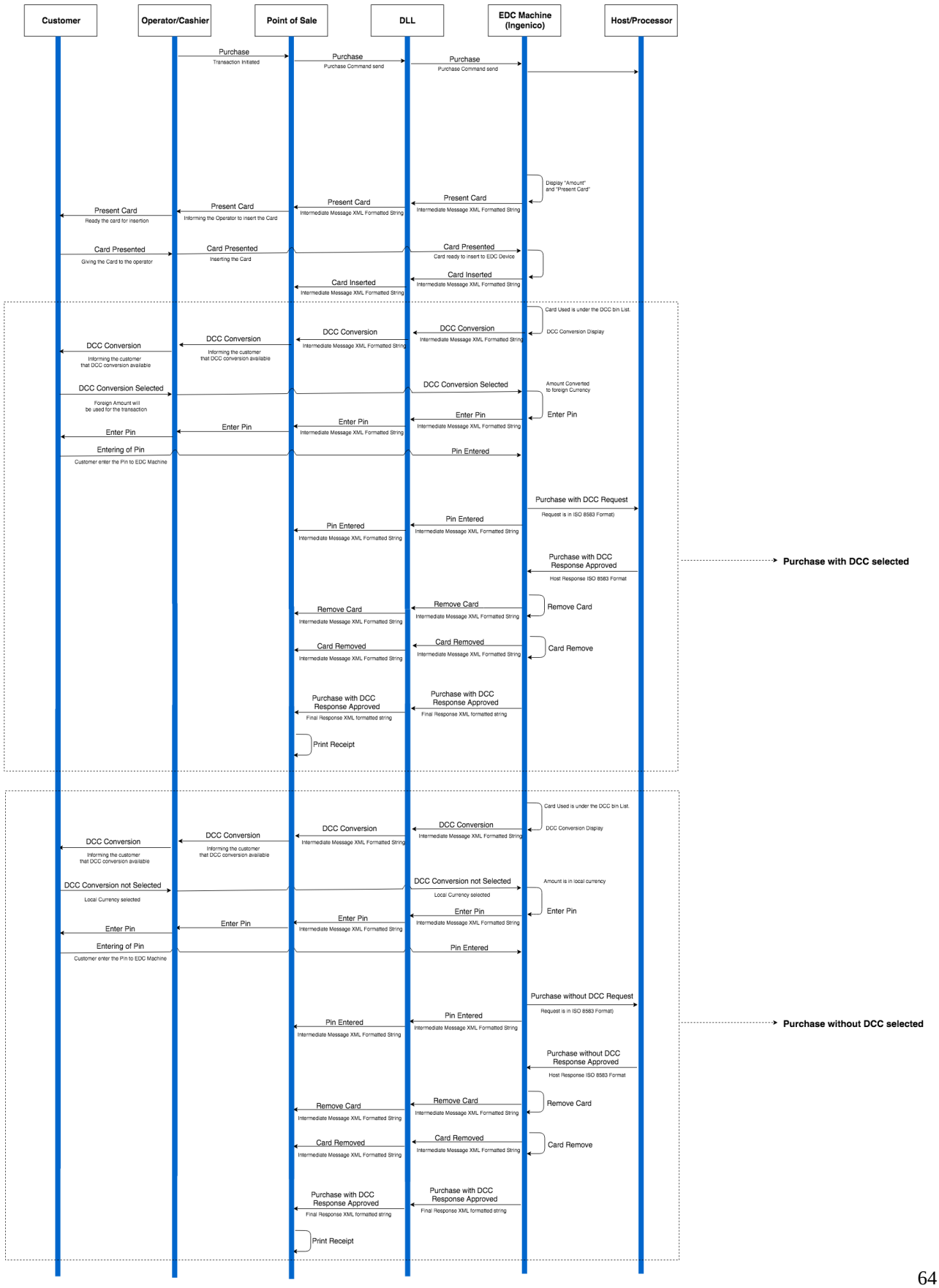
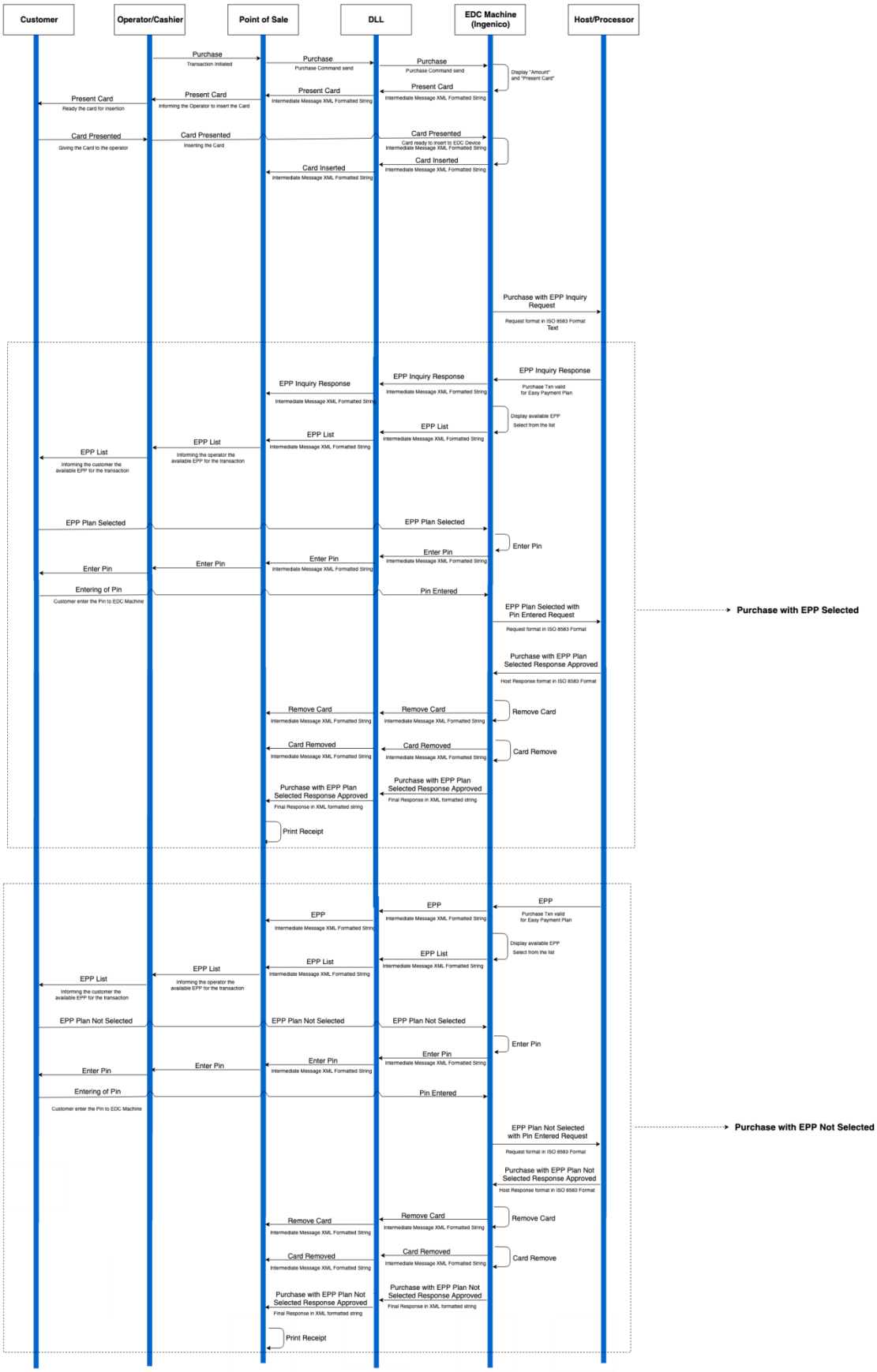
Appendix C – Sequence Diagram



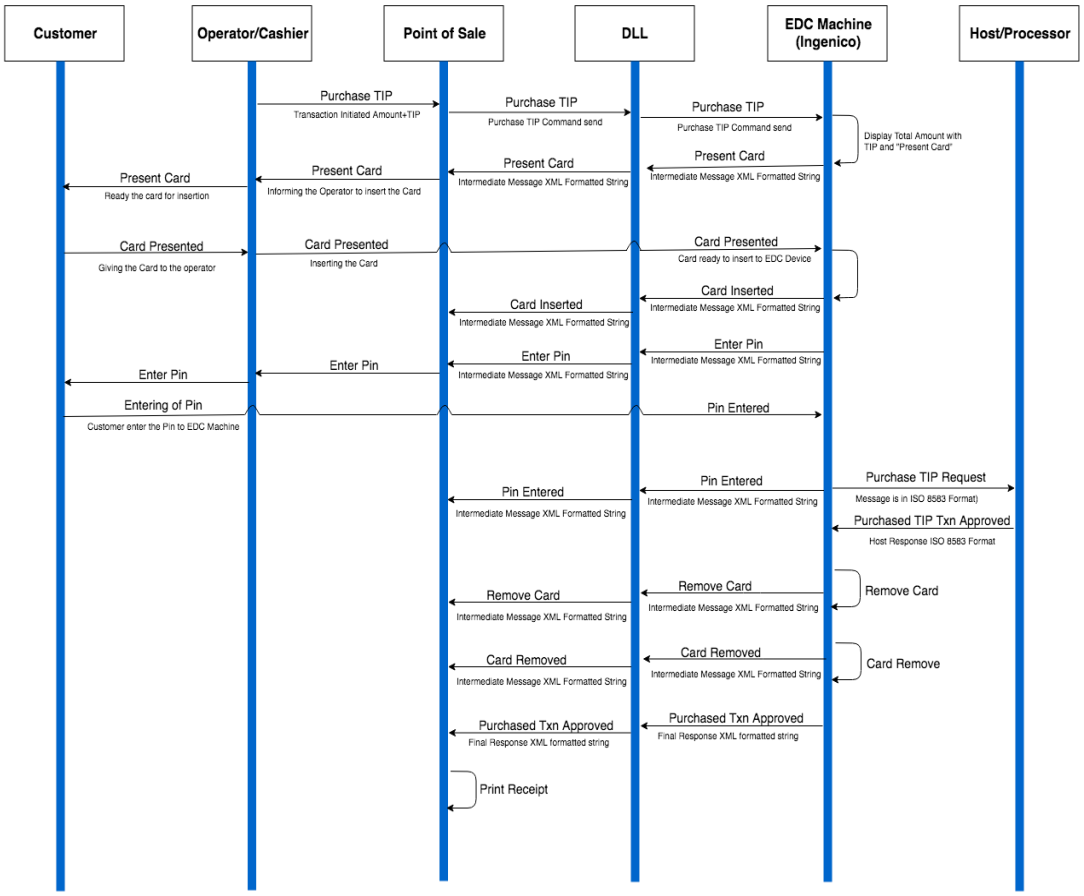
Purchase with DCC



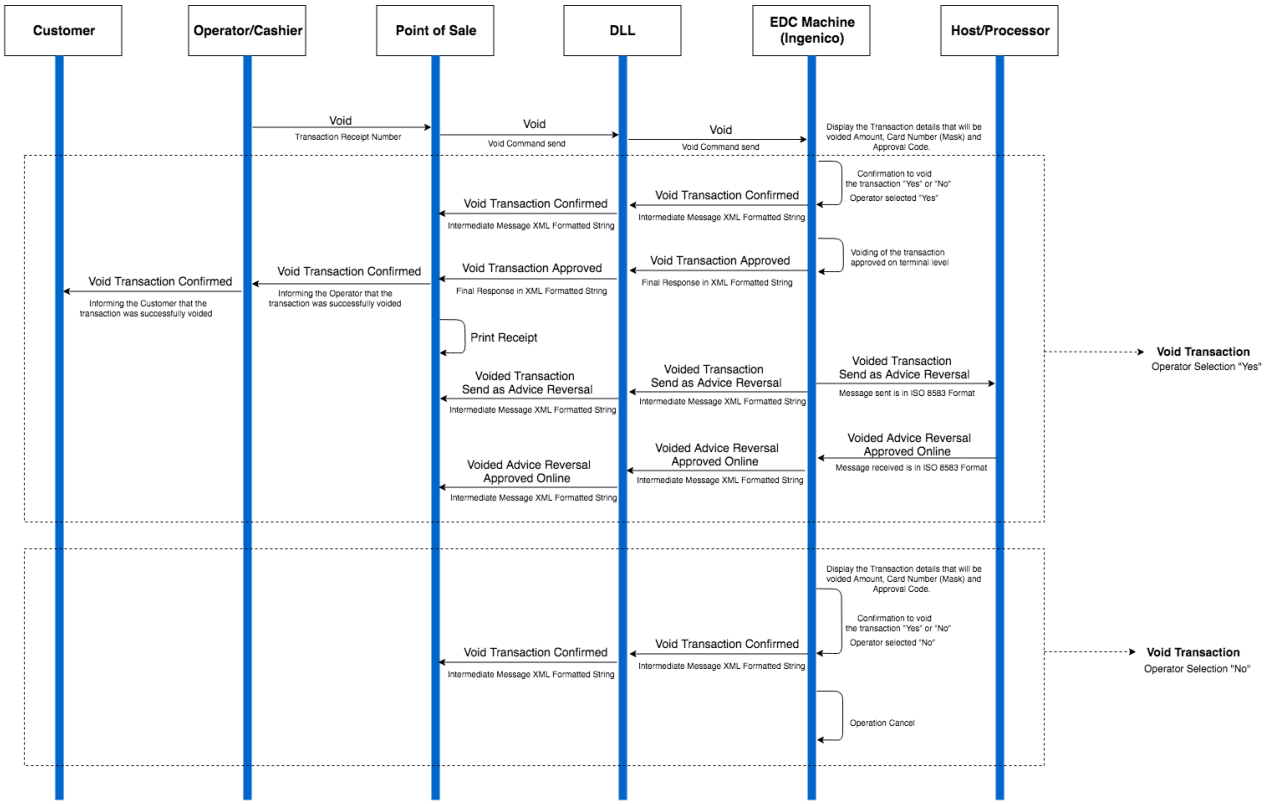
Purchase with EPP


Customer
Operator/Cashier
Point of Sale
DLL
EDC Machine (Ingenico)
Host/Processor
Purchase
Transaction Initiated
Purchase
Purchase Command send
Purchase
Purchase Command send
Display "Amount" and "Present Card"
Present Card
Ready the card for insertion
Present Card
Informing the Operator to insert the Card
Present Card
Intermediate Message XML Formatted String
Present Card
Intermediate Message XML Formatted String
Card Presented
Giving the Card to the operator
Card Presented
Inserting the Card
Card Presented
Card ready to insert to EDC Device Intermediate Message XML Formatted String
Card Inserted
Intermediate Message XML Formatted String
Card Inserted
Intermediate Message XML Formatted String
Purchase with EPP Inquiry Request
Request format in ISO 8583 Format Text
EPP Inquiry Response
Intermediate Message XML Formatted String
EPP Inquiry Response
Intermediate Message XML Formatted String
EPP Inquiry Response
Purchase Txn valid for Easy Payment Plan
Display available EPP Select from the list
EPP List
Intermediate Message XML Formatted String
EPP List
Intermediate Message XML Formatted String
EPP List
Informing the customer the available EPP for the transaction
EPP List
Informing the operator the available EPP for the transaction
EPP Plan Selected
EPP Plan Selected
Enter Pin
Enter Pin
Intermediate Message XML Formatted String
Enter Pin
Intermediate Message XML Formatted String
Enter Pin
Entering of Pin
Customer enter the Pin to EDC Machine
Pin Entered
EPP Plan Selected with Pin Entered Request
Request format in ISO 8583 Format
Purchase with EPP Selected
Purchase with EPP Plan Selected Response Approved
Host Response format in ISO 8583 Format
Remove Card
Intermediate Message XML Formatted String
Remove Card
Intermediate Message XML Formatted String
Remove Card
Card Removed
Intermediate Message XML Formatted String
Card Removed
Intermediate Message XML Formatted String
Card Remove
Purchase with EPP Plan Selected Response Approved
Final Response in XML formatted string
Purchase with EPP Plan Selected Response Approved
Final Response in XML formatted string
Print Receipt
EPP
Intermediate Message XML Formatted String
EPP
Intermediate Message XML Formatted String
EPP
Purchase Txn valid for Easy Payment Plan
Display available EPP Select from the list
EPP List
Intermediate Message XML Formatted String
EPP List
Intermediate Message XML Formatted String
EPP List
Informing the customer the available EPP for the transaction
EPP List
Informing the operator the available EPP for the transaction
EPP Plan Not Selected
EPP Plan Not Selected
EPP Plan Not Selected
Enter Pin
Enter Pin
Intermediate Message XML Formatted String
Enter Pin
Intermediate Message XML Formatted String
Enter Pin
Entering of Pin
Customer enter the Pin to EDC Machine
Pin Entered
EPP Plan Not Selected with Pin Entered Request
Request format in ISO 8583 Format
Purchase with EPP Not Selected
Purchase with EPP Plan Not Selected Response Approved
Host Response format in ISO 8583 Format
Remove Card
Intermediate Message XML Formatted String
Remove Card
Intermediate Message XML Formatted String
Remove Card
Card Removed
Intermediate Message XML Formatted String
Card Removed
Intermediate Message XML Formatted String
Card Remove
Purchase with EPP Plan Not Selected Response Approved
Final Response in XML formatted string
Purchase with EPP Plan Not Selected Response Approved
Final Response in XML formatted string
Print Receipt

Purchase with TIP



Void


Customer
Operator/Cashier
Point of Sale
DLL
EDC Machine (Ingenico)
Host/Processor
Void
Transaction Receipt Number
Void
Void Command send
Void
Void Command send
Display the Transaction details that will be voided Amount, Card Number (Mask) and Approval Code.
Confirmation to void the transaction "Yes" or "No"
Operator selected "Yes"
Void Transaction Confirmed
Intermediate Message XML Formatted String
Void Transaction Confirmed
Intermediate Message XML Formatted String
Voiding of the transaction approved on terminal level
Void Transaction Confirmed
Informing the Customer that the transaction was successfully voided
Void Transaction Confirmed
Informing the Operator that the transaction was successfully voided
Void Transaction Approved
Final Response in XML Formatted String
Void Transaction Approved
Final Response in XML Formatted String
Print Receipt
Voided Transaction Send as Advice Reversal
Intermediate Message XML Formatted String
Voided Transaction Send as Advice Reversal
Intermediate Message XML Formatted String
Voided Transaction Send as Advice Reversal
Message sent is in ISO 8583 Format
Void Transaction
Operator Selection "Yes"
Voided Advice Reversal Approved Online
Intermediate Message XML Formatted String
Voided Advice Reversal Approved Online
Intermediate Message XML Formatted String
Voided Advice Reversal Approved Online
Message received is in ISO 8583 Format
Display the Transaction details that will be voided Amount, Card Number (Mask) and Approval Code.
Confirmation to void the transaction "Yes" or "No"
Operator selected "No"
Void Transaction Confirmed
Intermediate Message XML Formatted String
Void Transaction Confirmed
Intermediate Message XML Formatted String
Void Transaction
Operator Selection "No"
Operation Cancel

Risk and challenges need to be considered on ECR-DLL.

- A timer of 1 minutes or more should be initialized when initiating a transaction. This Timeout is the overall transaction timeout and when a transaction is acknowledged by the ingenico device the timeout will be reset according to the intermediate message. The timer will stop when the DLL gets intermediate message “Transaction successful (013), Transaction failed (014) and ErrorCode tag” indicating the end of the transaction.

- Once the ECR gets the first ACK from the ingenico device notify the command is acknowledge by the device, the timer should reset accordingly with each intermediate message. If the ECR doesn’t get any response within the defined time then “E06” (No response from POS) should be raised.

- Consider the following tags to check for the status of a transaction - ErrorCode=E000 , <ResponseCode>APPROVED</ResponseCode> , Reversed tag =0,<HostActionCode>00</HostActionCode> <HostActionCodeMsg>APPROVAL</HostActionCodeMsg>

Note:

- Purchase - If Reversed tag is present and value is 1 then this should be treated as an unsuccessful transaction (declined) and the ResponseCode is Declined.
- Refund - Reversal tag will be always 0 regardless of ResponseCode tag value
- Void - Reversal tag will be always 1 and the response code will be approval and the transaction should be considered as success.

- USB disconnection & Connection – there might be cases of disconnection of communication and the ECR won't be able get any messages send by the Terminal. So, raise these events OnUSBDisconnection, OnUSBConnection to identify.

- **Last Transaction Command Usage**
  - While performing a sale transaction and if the communication between ECR & Ingenico device is broken and the device is unable to send the final response and timeout out happens on ECR. In this case
    - ECR can initiate Last Transaction command to see the result of the previous transaction, based on the final response ECR can close the check.
    - If the transaction is not successful, it will return with an ErrorCode "E028".
  - MrefValue : is a unique 16 digit ID that can be used to identify a transaction. If ECR is passing the mrefValue the same can be available in the final response send by the Ingenico device as well. Use case for mrefValue :
    - Sale 1 with MrefValue – Transaction is successful.
    - Sale 2 with MrefValue – which is not successful based on communication problem. In this case if last transaction command is called without MrefValue , Ingenico device will send the Last successful Transaction which is Sale 1 and there are cases that ECR will consider Sale 2 as successful and will give an item free of cost to the customer. So, in order to avoid this we can use MrefValue so that ECR can compare the MrefValue of Sale 2 and the value from the final response.

- Access denied to COMPort'x' : this error is happening if the port is being used by another resource or unable to release the port by the ECR object, so properly dispose the objects.
- Timer should always expire on Ingenico Terminal rather than in ECR.
- Based on the requirement from bank POS application will add extra xml tags that shouldn't have any impact on the ECR while parsing the final response.

COMMON ISSUES

- Connectivity Issues
  - Check the USB/RS232 is properly connected.

- Try connecting the USB cable in different slot.
- Check whether the port is correctly configured.
- Replace the USB cable if it's unable to develop a handshake between the ECR & EFTdevice.
- Check whether the EFT device IWL is properly ducted within the base
- Restart both EFT and POS

- EFT device stuck on "Last transaction Call".
  - While initiating a new Sale transaction, EFT device will send final response with ErrorCode E067 and the pending MrefValue. In this case initiate automatic Last Transaction call with the pending MrefValue to close the transaction/check and resume the state.

Sample Code Snippet

```
#region Members
    private static string _myT = "";
    private EftInterface _eft;
    private object _myObject = new object();
    private StringBuilder _sb;
    #endregion Members

    public frmMain()
    {
       InitializeComponent();
       //  cmbMode.SelectedIndex = 0;
    }

    #region Methods
    /// <summary>
    /// clear textbox values
    /// </summary>
    /// <param name="txt"></param>
    private void ClearText(TextBox txt)
    {
       txt.Invoke(() =>
       {
          txt.Text = string.Empty;
       });
    }

    /// <summary>
    /// displays exception message
    /// </summary>
    /// <param name="ex"></param>
    private void ErrorMessage(Exception ex)
    {
```

```
            SetTextValue(txtRXTXMessage, ex.Message);
        }

        /// <summary>
        /// display intermediate message with eventName and eftcommand value
        /// </summary>
        /// <param name="sender"></param>
        /// <param name="e"></param>
        private void IntermediateMessages(object sender, IntermediateResponseDataEventArgs e)
        {
            if (chkCommand.Checked) { SetTextValue(txtRXTXMessage, string.Format("{0}: {1}",
e.XmlLogDateTime, e.XmlCommand)); }
            if (chkData.Checked) { SetTextValue(txtRXTXMessage, string.Format("{0}: {1}",
e.XmlLogDateTime, e.XmlData)); }

            //Uncomment to write the result from the notepad
            //WriteFile(string.Format("{0}: {1}", e.XmlLogDateTime, e.XmlCommand));
            //WriteFile(string.Format("{0}: {1}", e.XmlLogDateTime, e.XmlData));
        }
        /// <summary>
        /// assigning value to textbox
        /// </summary>
        /// <param name="txt"></param>
        /// <param name="text"></param>
        private void SetTextValue(TextBox txt, string text)
        {
            txt.Invoke(() =>
            {
                //clear the textbox once it reach to 4000
                if (txt.Text.Length > 4000)
                {
                    txt.Text = string.Empty;
                }
                txt.Text = string.Format("{0}\r\n", text) + txt.Text;

            });
        }

        /// <summary>
        /// display trace
        /// </summary>
        /// <param name="sender"></param>
        /// <param name="e"></param>
        private void TraceMessages(object sender, TraceMessageEventArgs e)
        {

            if (chkTrace.Checked)
            {
```

```
            SetTextValue(txtRXTXMessage, string.Format("{0}: {1}", e.TraceDate, e.Trace));
        }

        //Uncomment to write the result from the notepad
        //WriteFile(string.Format("{0}: {1}", e.TraceDate, e.Trace));
    }


    /// <summary>
    ///  function to write to a file
    /// </summary>
    /// <param name="msg"></param>
    private void WriteFile(string msg)
    {
        string fileName = InterfaceConfig.GetKey("LOGPATH");
        fileName += "\\" + DateTime.Now.ToString("MM-dd-yyyy") + ".txt";
        using (var stream = new FileStream(fileName, FileMode.Append, FileAccess.Write))
        {
            using (TextWriter writer = new StreamWriter(stream))
            {
                writer.Write(msg);
                writer.Write(writer.NewLine);
            }
        }
    }
    #endregion Methods


    /// <summary>
    /// button click for clear message
    /// </summary>
    /// <param name="sender"></param>
    /// <param name="e"></param>
    private void btnClearMsg_Click(object sender, EventArgs e)
    {
        ClearText(txtRXTXMessage);
    }


    /// <summary>
    /// Establishing the connection
    /// </summary>
    /// <param name="sender"></param>
    /// <param name="e"></param>
    private void btnConnect_Click(object sender, EventArgs e)
    {
        try
```

```
        {
            //initialize interface

            _eft = EftInterface.CreateEftInterface("COM" + InterfaceConfig.GetKey("COMPORT"),
InterfaceConfig.GetKey("InterMediateXml"));

            _sb = new StringBuilder();
            //subscribe to the event
            _eft.OnTrace += TraceMessages;

            _eft.OnTransactionStatus += IntermediateMessages;
            _eft.OnUSBDisconnection += EftInterface_OnConnectivity;
            _eft.OnUSBConnection += EftInterface_OnConnectivity;
            //setting  timeout for the response message
            _eft.ControllerWait = int.Parse(txtRespTimer.Text);
            //setting a timeout for the transaction
            _eft.TransactionTimeout = int.Parse(txtTimeout.Text);

            _eft.EnableLog =InterfaceConfig.GetKey("EnableLog");



            //UI Behavior
            grpCommands.Enabled = true;
            grpTransaction.Enabled = true;
            btnConnect.Enabled = false;
            txtRespTimer.Enabled = false;
            txtTimeout.Enabled = false;
            btnDisconnect.Enabled = true;



        }
        catch (Exception ex)
        {
            ErrorMessage(ex);
        }
    }

    /// <summary>
    /// Close the Connection
    /// </summary>
    /// <param name="sender"></param>
    /// <param name="e"></param>
    private void btnDisconnect_Click(object sender, EventArgs e)
    {
        try
        {
```

```
            _eft.Close();
            //UI Behavior
            grpCommands.Enabled = false;
            grpTransaction.Enabled = false;
            btnConnect.Enabled = true;
            txtRespTimer.Enabled = true;
            txtTimeout.Enabled = true;
            btnDisconnect.Enabled = false;
        }
        catch (Exception ex) { ClearText(txtRXTXMessage); ErrorMessage(ex); }
        finally
        {
            _eft = null;

         //   _eft.Close();
            grpCommands.Enabled = false;
            grpTransaction.Enabled = false;
            btnConnect.Enabled = true;
            txtRespTimer.Enabled = true;
            txtTimeout.Enabled = true;
            btnDisconnect.Enabled = false;
        }
    }

    /// <summary>
    /// execute the GetStatus from the DLL
    /// </summary>
    /// <param name="sender"></param>
    /// <param name="e"></param>
    private void btnGetStatus_Click(object sender, EventArgs e)
    {

        try
        {
            var ret = _eft.GetStatus();
            SetTextValue(txtRXTXMessage, ret == 1 ? "Command Success" : "Command Failed");
        }
        catch (Exception exception)
        {
            MessageBox.Show(exception.Message);
        }
    }

    private void EftInterface_OnConnectivity(object sender, EventArgs e)
    {

        SetTextValue(txtRXTXMessage, string.Format("{0}: {1}", DateTime.Now.ToString("dd-MM-
yyyy HH:mm:ss:fff"), sender));
```

```
        //WriteFile(string.Format("{0}:  {1}",  DateTime.Now.ToString("dd-MM-yyyy
HH:mm:ss:fff"), sender));
    }

    /// <summary>
    /// execute the GetTerminal from the DLL
    /// </summary>
    /// <param name="sender"></param>
    /// <param name="e"></param>
    private void btnGetTerminalInfo_Click(object sender, EventArgs e)
    {
      var ret = 0;
      try
      {
        ret = _eft.GetTerminalInfo();
      }
      catch (Exception ex)
      {

        ErrorMessage(ex);
      }
      finally
      {
        SetTextValue(txtRXTXMessage, ret == 1 ? "Command Success" : "Command Failed");
      }
    }

    /// <summary>
    /// execute the GetTotals from the DLL
    /// </summary>
    /// <param name="sender"></param>
    /// <param name="e"></param>
    private void btnGetTotals_Click(object sender, EventArgs e)
    {
      var ret = 0;
      try
      {
        ret = _eft.GetTotals();
      }
      catch (Exception ex)
      {
        ErrorMessage(ex);
      }
      finally
      {
        SetTextValue(txtRXTXMessage, ret == 1 ? "Command Success" : "Command Failed");
      }
```

```
}

/// <summary>
/// eecute the purchase transaction from the DLL
/// </summary>
/// <param name="sender"></param>
/// <param name="e"></param>
private void btnPurchase_Click(object sender, EventArgs e)
{
   var ret = 0;
   try
   {
      ret = _eft.Purchase(txtAmount.Text, txtMRefLbl.Text);

   }
   catch (Exception ex)
   {
      ErrorMessage(ex);
   }
   finally
   {
      SetTextValue(txtRXTXMessage, ret == 1 ? "Command Success" : "Command Failed");
   }
}


private void btnVoidRefund_Click(object sender, EventArgs e)
{
   var ret = 0;
   try
   {
      ret = _eft.VoidRefund(txtAmount.Text, txtSequenceNo.Text,txtMRefLbl.Text);

   }
   catch (Exception ex)
   {
      ErrorMessage(ex);
   }
   finally
   {
      SetTextValue(txtRXTXMessage, ret == 1 ? "Command Success" : "Command Failed");
   }
}

private void btnRefund_Click(object sender, EventArgs e)
{
   var ret = 0;
   try
```

```
    {
        ret = _eft.Refund(txtAmount.Text,txtMRefLbl.Text);

    }
    catch (Exception ex)
    {
        ErrorMessage(ex);
    }
    finally
    {
        SetTextValue(txtRXTXMessage, ret == 1 ? "Command Success" : "Command Failed");
    }
}

private void btnStandAlone_Click(object sender, EventArgs e)
{
    var ret = 0;
    try
    {
        ret = _eft.StandAloneMode();
    }
    catch (Exception ex)
    {
        ErrorMessage(ex);
    }
    finally
    {
        SetTextValue(txtRXTXMessage, ret == 1 ? "Command Success" : "Command Failed");
    }
}

private void btnLastTransaction_Click(object sender, EventArgs e)
{
    var ret = 0;
    try
    {
        ret = _eft.LastTransactionStatus(txtMRefLbl.Text);
    }
    catch (Exception ex)
    {
        ErrorMessage(ex);
    }
    finally
    {
        SetTextValue(txtRXTXMessage, ret == 1 ? "Command Success" : "Command Failed");
    }
}
```

```
private void btnPrintDetailRpt_Click(object sender, EventArgs e)
{
   var ret = 0;
   try
   {
      ret = _eft.DetailReport();
   }
   catch (Exception ex)
   {
      ErrorMessage(ex);
   }
   finally
   {
      SetTextValue(txtRXTXMessage, ret == 1 ? "Command Success" : "Command Failed");
   }
}

private void btnPrntSummyRpt_Click(object sender, EventArgs e)
{
   var ret = 0;
   try
   {
      ret = _eft.PrintSummaryReport();
   }
   catch (Exception ex)
   {
      ErrorMessage(ex);
   }
   finally
   {
      SetTextValue(txtRXTXMessage, ret == 1 ? "Command Success" : "Command Failed");
   }
}

private void btnDayWiseRpt_Click(object sender, EventArgs e)
{
   var ret = 0;
   try
   {
      ret = _eft.PrintDayWiseReport();
   }
   catch (Exception ex)
   {
      ErrorMessage(ex);
   }
   finally
   {
```

```
            SetTextValue(txtRXTXMessage, ret == 1 ? "Command Success" : "Command Failed");
        }
    }
```